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RESEARCH INSTITUTE, NEW DELHI

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OF THE
JAMAICA AGRICULTURAL SOCIETY.

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Vol. XLI. JANUARY, 1937. No. 1.

Agriculture, the oldest of the industries, is also the most important because it satisfies the most fundamental of man's demands.

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EDITOR: GLAISTER BAXTER

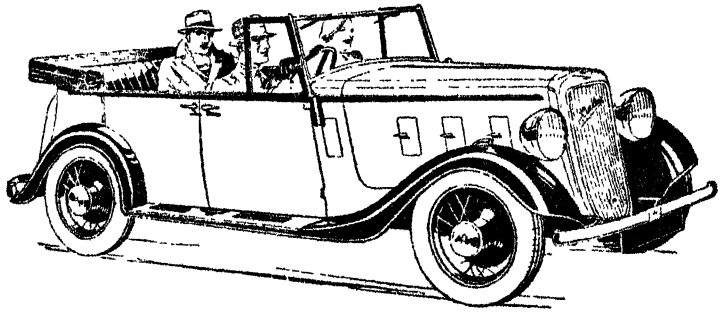
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OF THE

Jamaica Agricultural Society.

INDEX

FOR THE YEAR 1937.

VOLUME XLI.



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THE JOURNAL

OF THE

Jamaica Agricultural Society.

The more people do the more they can do; he who does nothing renders himself incapable of doing anything; while we are executing one work we are preparing ourselves for undertaking another.

Vol. XLI. JANUARY, 1937. No. 1.

BOARD OF MANAGEMENT.

The regular monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the office of the Society, 11 North Parade, Kingston, on Wednesday, the 2nd December, 1936, at 11.30 a.m. There were present: Messrs. Sidney Barton, R. A. Burke, C. O. Cover, T. P. V. McDaniel, D. D. Phillips, and W. Harper Watson, Hon. C. A. Reid and Major A. R. Moxsy; Mr. P. St. L. Bacquie, Supervisor of Instructors, and the Secretary, Glaister Baxter.

On the motion of Mr Burke seconded by Major Moxsy, Mr. Cover was elected Chairman

Apologies for Absence.

Apologies for Absence were submitted on behalf of the Director of Agriculture, Rev W. J. Thompson and Mr T. J. Cawley.

Confirmation of Minutes of the Previous Meeting.—

(a) *Regular monthly meeting held* 4.11.36. Copies of the minutes of the regular monthly meeting held on the 4th November having been sent to the members of the Board, they were taken as read, and on the motion of Mr. Burke, seconded by Major Moxsy, were confirmed.

(b) *Special meeting held* 25.11.36. The Secretary read the minutes of the Special meeting held on the 25th November, and on the motion of Major Moxsy, seconded by Mr. Phillips, these were confirmed.

As arising out of the Minutes of the regular meeting, Mr. McDaniel asked if anything further was received from the Department of Agriculture with reference to the banana disease at Ginger Hill and other places.

The Secretary stated that he had received a telephone message from the Director of Agriculture stating that the matter was having the attention of his Department.

As arising out of the minutes of the Special meeting, Mr. Burke said he wished to make some observation with reference to the applications from the Office Staff for increases of salary. With regard to the Seeds Department he was of opinion that the Secretary should have the power to run that Department without going to the Board for increases of salary here and there.

The Chairman asked Mr. Burke if he was asking whether the Seeds Clerk got an increase of salary.

Mr. Burke said he was only making an observation. He thought the Secretary should be allowed to run the Seeds Department and place a Balance Sheet before the Board.

Matters Arising out of the Minutes.—

(a) *Statement by Secretary* was submitted as follows:—

2nd December, 1936.

I resumed my duties on Monday, the 16th of November.
I have not been able to convene meetings of the Special Committee to consider pensions with special reference to ex-Instructor Banks or the Rat Campaign Committee.

(Sgd.) GLAISTER BAXTER,
Secretary.

The Chairman enquired if there was anything to be considered re remuneration in connection with the carrying on of the work during the Secretary's absence. The Secretary replied in the negative.

(b) *Additions to and extension of office premises: Report on progress of work*: The following was submitted:—

2nd December, 1936

I beg to offer the following particulars of expenditure on the buildings to date:—

Storeroom (northern) Contract price				£253	0	0	
Extras				37	15	6	
							290 15 6
Storeroom against building: contract price				220	0	0	
Extras				40	3	10	
							260 3 10
Demolishing portion of old buildings							4 0 0
Alterations to Office buildings							143 11 10
Total							£698 11 2

The work covering the two storerooms has been completed. The work on the office buildings for which the Society is to pay has also been completed.

The amount remaining from the Government Grant on the completion of the items set out above is £301 8s. 10d. from which sum £9 has been paid on account of work done on the roadway, and £2 15s. 0d. paid for advertising for tenders and stamping contracts, leaving now in hand the sum of £289 13s. 10d.

It was at first considered possible that the third storeroom against the west wall could have been built from the Government grant, but in view of the necessary extras that had to be incurred on the office buildings and two storerooms already built, this is now impossible.

Some roadway to provide ingress and egress to the storerooms is absolutely necessary. The tender and amendments recommended by the Public Works for the roadway amounts to £140 10s. 6d.

Investigating the details of expenditure the following are approximate figures as to the various items:—

Roadway to grade	£25	0	0	
Gate pillars and gateway complete	16	0	0	
Take up and relaying piping	1	10	6	
Rubble wall complete	57	0	0	
Six inch ballasting	19	0	0	
Macadam	22	0	0	**£140 10s. 6d.**

We are in a sense committed for the first three items, as the roadway has already been graded and work on the gateway commenced and the piping relaid.

I invite the Board's consideration as to whether they will decide on any cheaper methods for completing the roadway.

At the instruction of the Board of Management at their Special Meeting in connection with the Estimates for 1937-38, application has been made to Government for a further grant of £400 to complete the building programme that was originally planned.

(Sgd.) GLAISTER BAXTER,
Secretary.

The Secretary stated that with regard to the alterations on the office buildings the site plan on which the tenders were submitted were inadequate and so fresh specifications had had to be made, and for this reason he did not treat the excess as extras on this item. The roadway, he considered, was absolutely necessary, and, as the excesses on the various items made the balance in hand inadequate for the building of the storeroom against the western wall, it remained for the Board to consider whether the recommendations of the Public Works Department regarding the road, should be carried out, or some cheaper method of construction adopted

In answer to questions by Mr. Barton, the Secretary further stated that the Society was further committed for work done and started on the road to the sum of £33 10s. 6d., leaving actual cash available from the Building grant, amounting to £256 3s. 4d.

Mr Barton asked whether the Secretary had anything to put before the Board as to what might be finished with that amount

Major Moxsy suggested that the roadway be completed

The Chairman suggested that it was necessary for the figures to be carefully gone into, and it was decided that the matter should be referred to the First Vice-President to carry out the completion of the roadway and make the best possible arrangements in this connection.

Mr Burke said that in fairness to Mr. Bacquie, who acted during the Secretary's absence, it should be recorded that the Board was satisfied with his administration in regard to this section of the work, for at a former meeting what amounted almost to a censure had been voiced during a discussion on the matter of the work being carried through on the premises

This was agreed to.

Mr. Burke then, on behalf of the Board, welcomed the Secretary and expressed the hope that he had had a pleasant and beneficial holiday. He also complimented Mr. Bacque on the able manner in which he had performed his duties as Acting Secretary, and suggested that a letter be sent to him from the Board conveying their appreciation of his services in this matter.

This was agreed to.

Mr. Baxter thanked the Board for their kind expression. He explained that during his leave he had visited the office on several occasions, and on one of these visits he had suggested that the work on the roadway be started, forgetting that a letter had been sent to the Colonial Secretary stating that the roadway would not have been undertaken. If there was any blame it was more his than Mr. Bacquie's. He suggested that it was now necessary that the whole situation should be explained to the Colonial Secretary.

The Secretary was directed to communicate with the Colonial Secretary accordingly.

Statement of Accounts.—

(a) *Statement for October.* The Secretary stated that this appeared in the minutes.

(b) *Statement for November* was submitted as follows:—

STATEMENT OF ACCOUNT FOR NOVEMBER, 1936.

Receipts.	Estimates.	Total.
	£ s. d.	£ s. d.
To Subscriptions	190 0 0	109 5 5
Affiliation and Journal Fees	190 0 0	162 7 7
Advertisements in the Journal	400 0 0	34 9 0
Miscellaneous	10 0 0	10 18 0
Beekeeping Industry Sales		2 11 4
Seeds Department Profits, 1936-37	400 0 0	
Government Grant	10,500 0 0	7,875 0 0
	£11,690 0 0	8,194 11 4
Balance from 31st March, 1936		809 12 7
New Premises : Alterations		1,000 0 0
Agricultural Shows : Deposits		34 15 2
Beekeepers' Organization		0 5 0
Seeds Trading Account		3,609 13 6
		13,648 17 7
Less Expenditure (contra)		12,339 12 6
Balance		£1,309 5 1
Cash in hand	10 0 0	
Cash at Barclay's Bank, Current A/c	797 13 1	
Cash at Barclay's Bank, Special A/c	292 8 10	
Cash at Royal Bank of Canada	209 3 2	1,309 5 1

GOVERNMENT SAVINGS BANK

(Guaranteed by the Government of Jamaica.)

Deposits and withdrawals may be made at any of the 120 Branches in the Island.

Interest is added half-yearly on the 31st March and the 30th September.

Accounts may be opened with a deposit of 1/-.

The limit of deposits to any one account is £500.

F. D. MACPHAIL,
Manager.

Expenditure.	Estimates. £ s. d.	Total. £ s. d.
By Personal Emoluments—		
Secretary and Office Staff	2,142 0 0	1,531 1 8
Instructors and Supervisors	7,516 0 0	5,298 3 6
Instructors' Educational Courses and Attendance at Half-Yearly Meetings	125 0 0	73 11 7
Instructors' Tools and Contingencies	100 0 0	80 3 5
Secretary's and Office Travelling	100 0 0	70 9 0
Printing and Stationery	100 0 0	90 7 3
Printing and Issuing Journals and Reports ...	850 0 0	625 17 2
Rent and Rates	58 0 0	41 9 11
Postages and Telegrams	10 0 0	6 1 1
Rent of Telephones	27 0 0	17 4 8
Maintenance of Office Equipment	15 0 0	3 10 6
Incidentals	50 0 0	27 17 2
Auditor's Fees	25 0 0	25 0 0
Library Books	10 0 0	2 17 4
Show Equipment Repairs	15 0 0	3 13 9
Bombay Mango Propagation Plots, Citrus Budwood, Livestock Subsidies	150 0 0	72 16 11
New Office Equipment	40 0 0	6 0 0
Encouragement · Juvenile Branches	10 0 0	2 2 0
Fertilizer Experiments	25 0 0	5 14 7
Cassava Trial Plots	30 0 0	27 15 6
White Yam Competitions .. .	25 0 0	
Prize Holdings Competitions	150 0 0	
	£11,573 5 0	£7,951 17 0
Holdings Improvement Competition, St. Thomas .		10 0 0
Beekeeping Industry		28 12 2
New Premises · Alterations and Additions		710 6 2
Travelling Advances and Imprests .. .		265 0 0
Plant Disease Control		0 9 6
Shows Account		20 11 6
Beekeepers' Organization .. .		3 3 7
Seeds Trading Account		3,349 12 7
		£12,339 12 6

(Sgd.) GLAISTER BAXTER, Secretary and Treasurer

(Sgd.) DONALD MACDONALD, Accountant.

Communications.—

(a) *Letter from Mrs. Ewen*, widow of the late Hon. Guy S. Ewen, expressing appreciation of the Board's sympathy expressed at their last meeting, was submitted and noted.

(b) *Letter from C.S.O., re co-ordination and co-operation of Agricultural Department and Agricultural Society.* The following letter was submitted:—

6991/86.

24th November, 1936.

"I am directed to inform you that His Excellency the Governor proposes to hold a Conference to discuss developments in Agriculture and Land Settlement with special reference to the co-ordination and co-operation of the activities of the Agricultural Department and the Agricultural Society and the further development of the work of these Branches, with special reference to assistance in and inspection of field work.

2. It is suggested that the Agricultural Society be represented at this Conference by the three Vice-Presidents and yourself and I am to request you to communicate with them and ascertain if it will be convenient for them to attend at King's House at 10.30 a.m. on Saturday, the 5th of December.

3. It is also proposed to invite the Director of Agriculture, the Surveyor General and Representatives of the Agricultural Development Board to be present at this meeting."

(Sgd.) C. C. WOOLLEY,
Colonial Secretary.

Mr. Phillips asked if the instructions of the Board at their Special Meeting in regard to this matter had been carried out.

The Secretary replied in the affirmative and read the following communication which he had forwarded to the Colonial Secretary:—

26th November, 1936.

"With further reference to your letter No. 6391/36, dated 24th November, 1936, I have the honour to advise that the Vice-Presidents of this Society, while very willing to attend the Conference proposed, desire that it be drawn to His Excellency's attention that they would not feel themselves in a position to properly represent the Board of Management of this Society, and they therefore suggest that His Excellency consider receiving instead three delegates of the Board of Management of the Society, who could be appointed at the regular meeting of the Board of Management on the 2nd December next.

2. I am also directed to inform you that one of the Vice-Presidents, Mr. U. Theo. McKay, will be off the Island on the proposed date of the Conference."

(Sgd.) GLAISTER BAXTER,
Secretary

The Secretary stated in reply to a question from the Chairman that he had received no reply to his letter, but he had been unofficially informed that the Conference was postponed from the 5th to the 12th December.

It was explained that at the Special Meeting of the Board, held on the 25th November last, the letter from the Colonial Secretary was discussed, and it was felt that the Vice-Presidents could not represent the Board at the Conference unless they attended as delegates sent by the Board.

Mr. Barton said the Government having invited specific persons he did not think the Board had the right or privilege to send anyone else

Mr. Phillips held that the Board should have been requested to send delegates.

The Chairman said he shared Mr. Barton's view and added that the attendance of the Vice-Presidents would not commit the Board to anything, as any decisions to be arrived at would have to be referred to the Board.

After further discussion it was decided that nominations of delegates should be made pending the agreement of the Government that the persons to attend the Conference should be named by the Board.

The Chairman then moved that the three Vice-Presidents be asked to represent the Board at the Conference, and should any of them be unable to attend, that Messrs. Cawley and/or Wint be asked to attend.

This was seconded by Mr. Barton.

Mr. Phillips moved as an amendment that Messrs. Seymour, Cawley and Wint be asked to attend as delegates.

This was seconded by Major Moxsy, put to the vote and lost.

The substantive motion was then put to the vote and carried.

(c) *Memo from Secretary re Dairy Bull at Williamsfield, St. Elizabeth.* The following was submitted:—

23rd November, 1936.

To the Board of Management:

Gentlemen,

Mr. Brodie, the caretaker of the dairy bull at Williamsfield, St. Elizabeth, has asked to be relieved of his responsibility. Mr. R. D. Binns, of Southfield, is willing to become the caretaker of the animal, and he is a highly responsible person. I therefore ask your authority for the change.

(Sgd.) GLAISTER BAXTER,
Secretary.

Authority for the change was duly given.

(d) *Letter covering Xmas Seals for Anti-T.B. Funds.* Letter from the organizers of the 1936 Seals Campaign was submitted covering four shillings worth of Christmas Seals which the Society was requested to purchase.

The Chairman suggested that a contribution be made.

Mr. McDaniel said this was not an agricultural matter and he was entirely against a contribution being made.

Major Moxsy moved that the sum of Two Pounds be contributed.

This was seconded by the Chairman and carried, Mr. McDaniel dissenting.

The Secretary suggested that the contribution be charged to the Trading Account. This was agreed to.

(e) *Letters from Supervisor Hanson and Instructor G. R. Graham re Minor Crops for Portland.* The Secretary was directed to circulate these to the Board.

Reports from Committees.—

(a) *Bee Industry.* The Secretary submitted as follows:—

Gentlemen:

Your Bee Industry Committee sat this morning and interviewed the applicants for the position of Bee Instructor and recommend that Mr. Holon Heron be appointed.

Mr. Burke moved that the Report be adopted.

This was seconded by Mr Watson

Mr. McDaniel expressed himself as being entirely against the motion and asked if Mr. Coote had applied for the position

The Secretary replied in the affirmative.

Mr. McDaniel continuing, said he felt that Mr. Coote should have been given fuller consideration as, in his opinion, Mr. Coote had a right to the position. He had served the Society faithfully and well, and no fault had been found with his work.

Mr. Barton deplored the fact that of all the applicants that were interviewed only one could be recommended for the position. He felt that the circumstances that prevented the recommendation that Mr. Coote be appointed were very unfortunate as he felt that Mr. Coote was the most suitable person for the position, and he had in the past served the Society and the Island satisfactorily.

The Chairman said the Committee had been asked to appoint a Bee Instructor. The report of the Committee could either be adopted or rejected.

Mr. Burke pointed out that the Board had accepted conditions under which the money to be spent on account of the Bee Industry would be given, and said the Society rather than the individual should be considered.

The motion was put to the vote and carried on division, with the voting as follows:—Ayes: Messrs. Reid, Moxsy, Burke and Watson. Noes: Messrs. McDaniel, Phillips and Barton.

(b) *Instructors.* The following report was submitted:—

2nd December, 1936.

To the Board of Management:

Gentlemen,

Your Instructors' Committee met this morning and beg to recommend the following for your approval:—

1. That the Secretary having been on three months leave of absence, and just returned to duties, he be instructed to make a trip around the Island and see conditions

for himself and make a report to the Board of Management at their next meeting, including observations with references to the outbreak of the new disease of bananas.

2. That the attached schedule of leave for Instructors for 1937 be approved.

3. That the following applications from Branch Societies for affiliation be confirmed :—

Content (Westmoreland).
Top Hill (St. Elizabeth).
Mt. Airy (Clarendon).
Woodside (St. Mary).

4. That Supervisor Hanson, now on vacation, be given his salary for the current month in advance.

(Sgd.) C. O. COVER,
Chairman.
(Sgd.) GLAISTER BAXTER,
Secretary.

On a motion by Major Moxsy, seconded by Mr. Barton, the Report was adopted.

Diseases of Plants and Animals: Insect Pests.—

(a) *Panama Disease of Bananas—Reports from August and September, and* (b) *Amended copies of the above reports.* The Secretary laid on the table the reports for August and September on the incidence of Panama Disease of Bananas in all parishes except Portland, as also the amended copies of the reports.

Banana Disease.—

Mr. McDaniel said he wished to bring to the attention of the Board and the public the very serious condition existing with respect to the new disease affecting bananas. He was alarmed when he saw conditions a fortnight before during his tour of some of the parishes including Clarendon, St. Elizabeth, Westmoreland and St. Andrew. He thought the disease worse than Panama Disease, as while the latter attacked the roots of the plants the former swept everything before it. The disease, he said, was spreading rapidly throughout the Island, and he was of opinion that it was wind borne. He suggested that spraying operations could be tested out especially where the disease had not yet appeared, to see if it would be effective as a preventive measure. Reports had been sent to the Department of Science and Agriculture months ago and nothing has been forthcoming in the form of help to the planters. Communications only stated that the matter was receiving attention. As the Deuartment was apparently unable to do anything, he thought they as practical planters should get together and make an effort to see if the trouble could be checked. He further suggested that the Secretary of the Society be directed to carry out spraying experiments, as to save the trees an expenditure even up to threepence per tree was, in his opinion, warranted.

Major Moxsy said he did not think that Mr. McDaniel had gone far enough. He personally felt that serious pressure should be brought to bear on Government so that they make an effort to try to stem the progress of the disease.

Mr. Barton asked if anything definite or concrete from the Department of Science and Agriculture had been received as to what was being done in connection with the disease.

The Secretary stated that the Department said the matter was receiving attention.

Mr. Barton said realizing that the whole thing was a serious menace to the country, he thought the matter should be sericusly and forcefully put before Government by the Society with a request that they take up

the matter seriously. He did not see that it was the duty of the Society to carry out experiments. That was the prerogative of the Department of Science and Agriculture. The Society could, however, place the services of their Instructors at the disposal of the Department of Agriculture to assist in whatever way it was desired.

Mr. Burke suggested that the Department of Agriculture should be asked to supply progress reports so that the Society could know what was being done from time to time.

The Chairman pointed out that when the Board discussed this matter at a previous meeting, the penalty they incurred was a suggestion published in the Gleaner that the Society should be abolished. That was a weakness of the Society. When facts were stated that were not pleasing to the heads of some Departments, the Society was adversely criticized by some persons The attitude of the Department in these circumstances was the same as that they assumed during the outbreaks of Panama Disease, Banana Borers and the Pimento Disease, all of which had had disastrous effects on crops. The Microbiologist who was now designated as Plant Pathologist, spent a considerable amount of his time on experiments with the export of vegetables, while this banana disease needed his attention. While he was not stating that the Department of Agriculture was not doing anything to combat the disease, for the lack of information from them, planters were floundering.

Mr. McDaniel again voiced his suggestion that the Secretary should carry out spraying experiments.

The Secretary said that while he was willing to carry out the directions of the Board, he had not the scientific knowledge to plan such experiments, and could only carry on an experiment if specific instructions were given by the Board as to what they required to be done.

Mr. Barton said he was confident that the Director of Agriculture would do what was necessary and suggested that a stronger appeal be made to him.

After further discussion, Major Moxsy moved: That the Board of Management of the Society views with alarm the increasing march of the new disease of bananas and respectfully request that the Department of Science and Agriculture give some pronouncement at an early date to allay the feelings of the public.

This was seconded by Mr. Burke

Mr. McDaniel moved as an amendment: That the Secretary be given instructions to use various sprays on fields that are infected and on fields that are not infected to see the result of the various sprays, at a cost not exceeding £30; funds to be provided from the Society's surplus funds.

This was seconded by Mr. Phillips.

The amendment was put to the vote and lost.

The substantive motion was then put to the vote and carried.

The Secretary was directed to forward the resolution to the Colonial Secretary.

Competitions.—

(a) *Letter from Instructor Robotham re Duncans Cottage Holdings.* The Secretary said this letter was the outcome of a request from the Duncans Branch for a contribution to their Prize Fund. The Instructor advised that the aim of the Competition was to encourage small settlers to develop their holdings and also encourage them to live in better houses. There were nine entrants, three of whom were disqualified.

It was decided that no grant could be made as the number of entries was considered inadequate.

Resolutions from Branches.—

(a) *Duncans re Services of Tobacco Expert.* This resolution asked that the Board use its influence to make available to that section the services of the Tobacco Expert at an early date

The Secretary stated that a similar application had been made by another Branch at a previous meeting, and the Board decided that each section should wait its turn for visits of the Tobacco Expert.

It was decided that the same should apply in this instance

(b) The Secretary was directed to refer resolutions on the following from the *Grange Hill Branch* to the proper authorities:

(i) Postal Facilities.
(ii) Government Savings Bank
(iii) Road.

Authorised Persons.—

(a) *Letter from Springfield Branch (St. Catherine)* The Springfield Branch complained that they were not satisfied with the treatment meted out to one of their Authorised Persons who, with the Corporal of the Troja Police Station had been involved in a suit brought against them for false imprisonment, when they both had had to pay certain damages awarded the plaintiff. The Authorised Person's commission had been taken away while the Corporal retained his.

The Secretary was directed to refer the matter to the Inspector General of Police.

New Members.—

On the motion of Major Moxsy, seconded by Mr. McDaniel, the following were elected to membership of the Society:—

R. N. Johnston, Barbican, Liguanea.
Oscar J. Lecense, 68 Red Hills Road, Halfway Tree
W. N. Meeks, 37a Orange Street, Kingston

Other Business.—

(a) *Letter from Mrs. Josephs acknowledging the Board's expressions of sympathy* was presented and noted.

(b) *Letter from C.S.O. re resolution re Government assistance with establishment of industrial enterprises.* The following was submitted:—

6504/36.

27th November, 1936.

"With reference to your letter No. C.S.O. 104 of the 13th November, 1936, I have the honour to inform you that the question of Government assistance for the establishment of industrial enterprises in order to relieve unemployment is receiving consideration by the Government."

(Sgd.) A. R. DIGNUM,
for Colonial Secretary

This was noted.

(c) *Letter from Supervisor Hanson re increment.* In this letter Mr. Hanson called the attention of the Board to the resolution adopted at their regular monthly meeting held in September last, and pointed out that he was entitled to an increment of £25 as from the 1st of April next.

The Chairman said as he understood the matter there was a scale of increments for the Field Staff which had been approved by the Board which he thought had been reflected in the Estimates recently considered.

Major Moxsy said that at the meeting that dealt with the Estimates a motion was passed against increments being given other than that to which the Board was legally committed.

The Chairman said the outdoor staff was graded and their salaries were fixed and approved by Government, and it was clearly the duty of the Board to work along the lines adopted and reflect the increments on the estimates to be submitted. He said that although the matter was decided at a former meeting of the Board, if the Board acted *ultra vires* the meeting was competent to go back on the previous decision.

The Chairman suggested that in sending forward the estimates, the Secretary should set out what the outdoor staff would be entitled to under the new grading, and if this was approved by Government, the increments could be paid. The same would apply in the case of the indoor staff which had also recently been graded.

This was agreed to.

The Secretary was directed to advise Mr. Hanson that his letter was receiving attention

Mr Burke left the meeting.

(d) *Report on Panama Disease of Bananas, October*, 1936. The Secretary laid on the table the summary of the incidence of Panama Disease in all parishes except Portland for the month of October, 1936 and stated that copies would be forwarded to individual members of the Board.

(e) *Letter from C.S.O. re addition of "Dogwood" to Schedule of "The Sale of the Bark of Trees (Prevention) Law* The following was read:—

No. 863/32.

24th November, 1936.

"With reference to your letter No. 87 of the 25th September, 1936, I have the honour to inform you that the Governor in Privy Council on the 16th November, 1936, under Section 2 of Law 17 of 1929, "The Sale of the Bark of Trees (Prevention) Law 1929" added Dogwood to the Schedule of that Law."

(Sgd.) A. R. DIGNUM,
for Colonial Secretary.

This was noted.

(f) *Letter from Sugar Control Board re Sugars retailed.* The Secretary read the following:—

No. 17/20/36

16th November, 1936.

I am directed to acknowlede the receipt of your letter No. 1870/PB. II, dated 12th September, 1936, and to state that the matter was brought up at a meeting of the Board held on 5th November, 1936.

2. The Board has decided to take action with a view to ensuring that the standard of quality of law grade sugars retained for consumption in the Island is kept as high as possible. The Board, however, does not favour any reduction in the retail price of these low grade sugars, as it considers that there would be depression in the market value of "wet sugar," which would react unfavourably upon this important industry.

(Sgd.) E. G. WILSON,
Secretary, Sugar Control Board.

The Secretary was directed to thank the Board for this communication.

The Secretary was directed to forward the following resolutions to the proper authorities:—

(g) *Resolutions from St. Catherine Branches Associated re*:—
(i) *Caution Boards.*
(ii) *Canning Factories.*
(iii) *Third Party Insurance Policies for owners of Motor Vehicles.*
(iv) *District Nurse for Bartons.*
(v) *Parochial Dispensary for Ginger Ridge.*
(vi) *Crescent School.*
(vii) *Water Supplies* (4 *resolutions*).

(h) *Resolution from Little London Branch re development of Agricultural resources.*

(i) *Letter from Messrs. Grossett and Duffus* (*Solicitors*), was submitted stating that acting for the vendors of the Stanton Harcourt Land Settlement, they were offering from three to five acres of land for a period of 5 years (or longer if required) at a Pepper-Corn rental of 1/- per annum for the purpose of establishing a Citrus Nursery and Vegetable Garden to encourage and assist the people in the Rio Grande Valley of Portland, and particularly the purchasers of the Stanton Harcourt lands, consisting of 302 acres of fertile and well watered lands in developing other crops besides bananas.

The Chairman suggested that as the Government had organized a Special Citrus Campaign the matter should be referred to them.

The Secretary suggested that the matter might be referred to a Special Committee consisting of Mr. Watson, the Supervisor for the district and himself, for recommendations.

The suggestion of the Chairman was agreed to and the Secretary directed to forward the matter to the Department of Agriculture.

(j) *Invitation from Portland Branches Associated* to the Board of Management and the Secretary to attend their meeting scheduled for the 12th December, 1936 was presented and noted.

(k) *Secretary's Report on Travelling for November.* The Secretary reported that he had done no travelling during the month of November.

(l) *Resolutions from St. Ann Branches Associated re* (i) *Police Station at Bamboo;* (ii) *State Agricultural Bank.* The Secretary was directed to forward these resolutions to the proper authorities.

(m) *Resolution from Mt. Airey Branch* asking that a resident District Medical Officer and a resident nurse be appointed for the St. Paul's area of Westmoreland was submitted and the Secretary directed to forward the same to the Superintending Medical Officer.

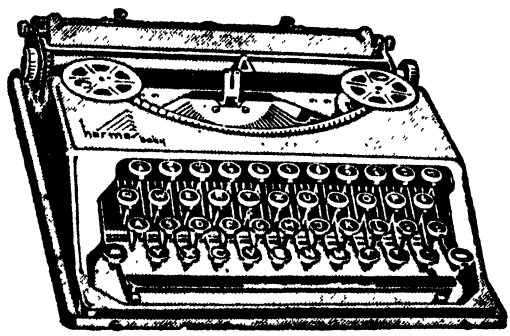
(n) *Date of Half-Yearly Meeting.* The date of the Half-Yearly General Meeting was fixed for Thursday, the 21st January, 1937.

The meeting adjourned to Wednesday, the 6th January, 1937, at 11.30 a.m.

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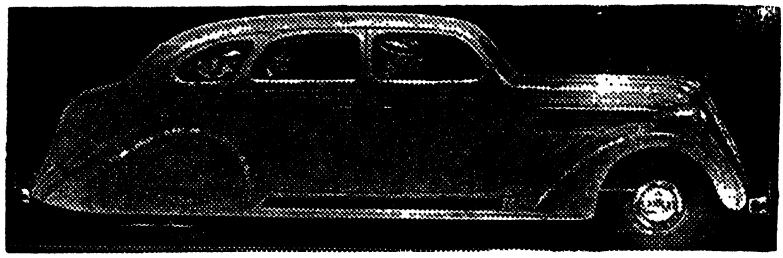
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THE REGULATION OF CITRUS EXPORTS.

By A. C. BARNES, B.Sc. (Hons.), F.I.C., A.M.I. Ch.E., Director of Agriculture.

(*Reprinted from September, 1936 Issue.*)

An important part of the agricultural policy of the Government of Jamaica is the development of the Citrus Industry on several definite, but closely interconnected lines, including the introduction, propagation, and distribution of improved marketable varieties of grapefruit, oranges, and limes; the regulation of the conditions under which citrus fruits are reaped, transported, processed, and packed for export; the storage of citrus fruit at low temperatures; shipping facilities for export, and freights; and the investigation of markets. Indeed, the close attention being paid to the extensive and varied requirements of this rapidly growing industry not only indicates the importance attached to it, but shows clearly the direction in which future work is necessary to consolidate what has already been accomplished, and to ensure the permanent and profitable place in the markets so essential to the prosperity of those engaged in it.

Hitherto the quantities of fruit exported annually have been small in comparison with those of countries supplying the markets, and the volume of standard varieties insignificant. Various exporters acting on their own behalf, and dealing with fruit purchased from others, or supplied for collective marketing, have succeeded in establishing the name of Jamaica citrus in the United Kingdom, Canada, and New Zealand, but it is only when supplies from other countries are low, or the demand for fruit is considerable, that satisfactory prices are obtained in the two former, while success in the latter is mainly due to the absence of other citrus, particularly oranges, of Empire origin during the period of maximum demand in a protected market. Added to this fortuitous circumstance is the effect of action taken locally, in consultation with the Government of New Zealand and fruit importers in the Dominion, by the Government and responsible exporters, to limit quantities shipped in accordance with market requirements, and to maintain the highest possible standards of quality and pack, which has given to Jamaica a profitable, and apparently permanent market for a substantial volume of fruit.

It must be remembered that the Island has to plan for the future of the industry; for the time when the greater proportion of citrus available for export will be of uniform standard varieties, which will compare favourably with similar fruit from any part of the world; for the time not far distant when the quantity of fruit for export will be beyond the capacity of existing shipping services; for the time when fruit from new plantings ranging from a few trees to considerable acreages will have to be moved from tree to market, some as fresh fruit, and some in the form of juice or canned fruit.

While, therefore, the interests of long established growers and exporters are recognised, the time has arrived to co-ordinate those interests with those of persons who have more recently entered the industry. The small grower and exporter, with his special market may still act independently if he wishes, but he should be prepared to

conform without demur to the general requirements and standards laid down for all concerned; indeed, he would be likely to find his business adversely affected were he to neglect to do so. Moreover, with the rapidly increasing volume of fruit to be exported, the individual small exporter is likely to find difficulty in securing shipping space unless he is associated with some organisation acting on behalf of shippers. One can understand the desire on the part of many to be independent, and unfettered by regulations of any kind, but such a state of affairs is impossible in the face of organised competition in the markets when hundreds of thousands of boxes of fruit have to be disposed of in a season, and the critical opinion of consumers satisfied. The citrus industry has now become a matter of Island rather than individual interest, and must be considered as such. It is a matter for satisfaction that this is now recognised by persons with considerable investments in citrus, as well as by most others who have the interests of Jamaica at heart.

A clear indication of the need for action to co-ordinate and regulate citrus exports is the attitude of shipping companies towards repeated representations for reduction of ocean freights. Some success has at last been achieved, but conditions are attached to the lower freight rates offered both to Canada and the United Kingdom which will make it impossible, or at least very difficult, for the small exporter acting independently to derive any advantage. Thus, special rates are quoted to Canadian ports to single shippers of 120,000 boxes or over during the season, while the rate to the United Kingdom is reduced on condition that space is booked and paid for whether filled or not. In both cases the shipper acting independently may, and probably will, find himself unable to save anything on his freight bill; whereas by combining with others he might be able to do so. One of the functions of the new Control Board will be to act as the clearing house for exports of citrus, becoming as it were the "single shipper" able to command the best possible terms by booking the full accommodation available, and allocating it in turn to the actual citrus exporters. Amongst other things the duty will devolve upon the Board of arranging sufficient shipping capacity for the full season's crop, taking account of course of the commitments in the markets of the shippers.

It is important to remember that the shipping requirements of the citrus industry are seasonal, and that there is considerable fluctuation in space demand during the export period. Satisfactory arrangements have now been made for the New Zealand consignments for the coming season, and there can be no doubt that the example of what can be done by well planned organisation, and co-ordination between exporters, shipping companies, and importers of fruit in the country of consignment is worthy of extension to the whole of the citrus trade of the Island. It is apparently too much to hope that this can be brought about by voluntary action; attempts to do so have not succeeded, though there has for some time been almost unanimous opinion in favour.

The Government is aware of the services rendered to the industry by those who have been mainly responsible for disposing of the citrus crop in recent years. The careful study of marketing conditions and requirements, the results of which have been generously placed at the disposal of the Government, is warmly appreciated; while the support by responsible exporters of measures introduced for improvement and standardisation of exports has been a powerful factor in the attainment of uniform packing which now compares most favourably with any in

the markets where Jamaica citrus is sold. But the matter cannot be left there, and the time has arrived to take stock of the position in order that a form of regulation may be devised which will command confidence and respect in our markets, and safeguard the interests of the rapidly increasing body of growers.

In arriving at the decision to appoint a Citrus Export Control Board, the Government has been guided by experience of the work of the Advisory Board under the Agricultural Produce Law, and the administration of the Citrus Regulations under that Law, which provide the foundation for the action now taken. There are also the experiences of other countries which have adopted systems of export control for fruit and other products to draw upon, and although the fact that a certain procedure to deal with a particular problem has been found successful in other places is not always a sound reason for adopting it in Jamaica, in the present instance the methods of South Africa, California, and Florida, in regard to citrus, and of New Zealand with its Export Control Boards for fruit and other produce, give a clear indication of the action required locally to bring about similar results.

The Citrus Export Control Board has been appointed in the first instance to advise the Government as to the system of regulation necessary to co-ordinate exports of citrus fruits, having regard to the history of the industry and the development likely to occur in the near future. While there is no desire to forestall the Board in its recommendations, it appears advisable to indicate the principal activities necessary to achieve the desired result.

It is intended that the Board shall act as the channel through which all exports of citrus fruits pass. This does not involve the actual physical handling of consignments on behalf of shippers, but some method will be adopted whereby all booking of shipping space can be effected for shippers by the Board. It will be necessary for the Board to make crop estimates, and to be placed in possession of information concerning individual shippers' space requirements in advance. Negotiations would then take place with the shipping companies for the reservation of the total space required which would then be allocated by the Board to the individual exporters. Provision would be necessary for some degree of elasticity in order to ensure that all space once booked was entirely filled, and shippers would have to give sufficient notice of excess or short supplies to enable any necessary adjustments to be made. In this manner it is expected that the Board, on behalf of shippers, would be in a position to take full advantage of any concessions regarding freight rates such as those already referred to, passing on the benefits to shippers and growers.

The services involved in connection with shipping arrangements appear likely to be the most important functions of the Board, and in order that they may be efficiently conducted, it would be necessary for exporters to be licensed or registered under conditions which would confine the business of exporting citrus to *bona fide* persons, including substantial growers, and ensure that the obligations entered into by the Board on their behalf were properly met. It will be noted that grower-exporters are not overlooked. It is recognised that there are several who export fruit grown by themselves, and it is possible that special conditions might be made to apply to them; it would, however, be essential that space bookings should be made through the Board, and that satisfactory guarantees were given in respect of arrangements made on their behalf.

There can be no doubt that such action would be of great benefit to

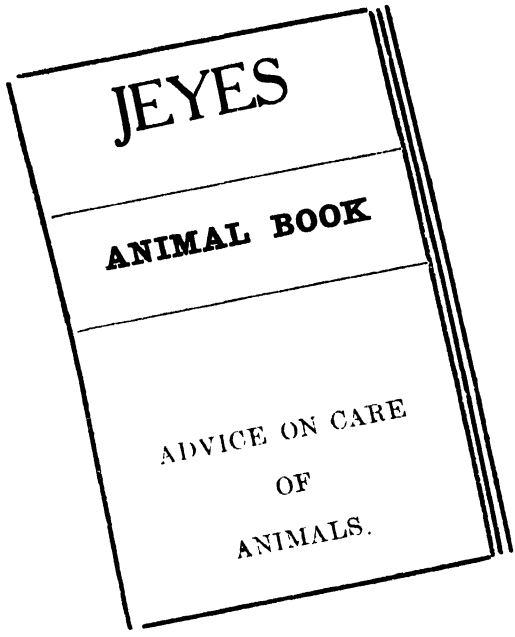
the actual growers of citrus. They are the people who collectively form the greater part of the interest grouped under the term "industry" without whom that industry could not exist. Thus, although packers and shippers, as apart from growers who are also packers and shippers, will derive benefit, the principal advantages will accrue to the growers of the fruit, who will be assured of the services in many ways of a responsible body acting in their interests under the authority of the Government. The effects will be apparent also in the markets, where importers will have increased confidence in the supplies available from Jamaica, which they may thus be able to place in advance of arrival at better average prices than now.

The advance arrangements necessary to ensure sufficient shipping space when normal services are inadequate are complex and extensive, and must usually be completed several months before the actual export commences. With the system hitherto practised, where exporters make their individual arrangements with shipping companies, there is grave danger that adequate accommodation will not be available for the quantity of fruit to be exported, particularly during the period of peak production. Apart from citrus, there is a growing export trade in other fruits and vegetables which coincides with the season of citrus exports, and the time is not far distant, if indeed it has not already arrived, when special ships may have to be chartered to deal with the trade. It is fortunate that the main citrus season is on when banana exports are at a minimum, but even so the available space is likely to be insufficient in the ships normally providing the service to the United Kingdom.

The shipping companies, without which the industry would be crippled, welcome the proposal to appoint a single authority to deal with them on behalf of all citrus exporters, and the value of the services which that authority can render to the industry in this direction alone cannot be over-estimated. Without it, the small exporter will be in danger of exclusion because of his inability to make advance bookings or to give the guarantees required by the shipping companies, while both he and the bigger man in the trade will be subjected to the grave risk of having insufficient shipping facilities at certain times. There can be no doubt that the shipping companies are eager for the business, but for obvious reasons they must take steps to protect their interests, and they cannot be expected to assume unreasonable risks.

Apart from considerations of quality and standard of pack, success in the citrus industry depends upon economy and efficiency at every stage, from production to sale in the overseas markets. Handling, transport, and all other charges, both internal and external must be reduced to a minimum if citrus growing is to be profitable. The movement of fruit in the Island requires attention with the object of reducing loss by damage and of lowering transport costs. The latter should in due course receive attention by the Board, which would have bargaining powers not possessed by individuals, enabling it to organise the carriage of fruit by road and railway at the lowest possible expense.

Amongst other things, the Board would investigate the economic conditions of citrus marketing generally with the object of bringing to light and correcting abuses. Investigations of reported irregularities might from time to time be necessary, while at all times close contact with markets would be maintained. The Board would not replace the services now provided by the Produce Inspection Staff, nor supplant the Advisory Board under the Agricultural Produce Law, but it should rather supplement those organisations by regulating phases of marketing falling outside their scope.



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EDITORIAL COMMENTS.

The Leaf Affection of Bananas.

The high spot in our agricultural life for the past month or two has been the appearance of a leaf affection of bananas, that has caused considerable perturbation not only among banana planters whose more intimate concern it is, but to all Jamaica, on account of the importance of the banana crop to the Island, its finances and Government Revenue.

We have no desire to minimise the effects that any serious disease of bananas would have in Jamaica, indeed, this Society is responsible for having brought the existence of the supposed disease to public notice. We would however, say, that even at the time of writing, some improvement is noticeable; areas that have been mildly infected for the past three months, seemed not to have developed the more serious effects, and although the leaf trouble has been diagnosed over very wide areas in Jamaica, had there not been a few serious but isolated attacks here and there, the slight leaf spotting characteristic of the *cercospora musae* would have passed entirely unnoticed, and not have been mentioned at all.

Several well known farmers with experience of many many years have mentioned to us that this spotting has been a regular recurring condition in the Winter time. We also have a long experience of bananas and have been quite accustomed to notice leaf spotting all about, and especially so in Winter time, but are not prepared to vouch for the fact that the spotting which we have always noticed is the same, although we are also not prepared to say it is not the same.

The earlier pronouncement of the Department of Science and Agriculture clearly pointed out the possibility of a close co-relationship of the leaf affection and adverse soil condition, and we are inclined to lean toward this line of thought. The main thing to bear in mind is that not one-tenth of 1% of the Colony's bananas have been hurt, and it does the farmer more harm than good to surrender to panic in matters of this kind. The reaction from panic will stifle enterprise, freeze credit and quite possibly harm markets.

We have a hopeful feeling that by the time this article appears, the public will be realizing that the worst is over and in addition we might have some more specific knowledge than we at present possess, as to the cause and the proper methods of prevention and control of the condition that has caused such a lot of alarm.

NOTICE.

Subscription.

Members of the Jamaica Agricultural Society and subscribers are reminded that their annual subscription will fall due on the first of April next, and that this subscription is payable in advance for the financial year 1937-38.

The special attention of oversea members and subscribers is drawn to our revised rules which provide that their subscription rates are raised from six shillings to ten shillings per year, and we trust that they will feel that our Journal is well worth it. This increase was caused by two reasons,—one is the increased number of pages in our Journal, and the other, the increased postage resulting from a bigger Journal.

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EDITOR'S NOTE:
Through an oversight, *Tobacco Circular No.* 1, by Mr. F. W. Winckley, Tobacco Specialist, was not published when it should have been published. It is now published with pleasure and will form part of the series of circulars that have been issued by Mr. Winckley.

TOBACCO.

DEPARTMENT OF SCIENCE AND AGRICULTURE.

TOBACCO CIRCULAR No. 1. (*1st September*, 1936.)

(By F. W. WINCKLEY, Tobacco Specialist.)

SEEDBEDS. (*Nurseries*)

The nurseries should be laid out on the best ground available, i.e., loose, well-drained soil, which will not cake after watering, and which has been well cultivated, in other words twice ploughed and twice harrowed.

For 1 acre, planting either the double row or single row system, and allowing 20% for replants, about 14,000 plants will be needed, so the seedbeds should be set out accordingly. Each seedbed of 20 ft. x 3 ft. should be able to supply 2,000 good seedlings, so 7 seed-beds of above dimensions would be enough, but to be on the safe side it is better to make 8 beds per acre or even more. These beds should be sown at one-week intervals, so that one always has sufficient suckers as planting progresses.

How to make the Seedbeds.—After selecting the ground, and after thorough cultivation, and final raking, the seedbeds should be set out in length North-South and in breadth East-West. First mark out with pegs where the seedbeds are to come, leaving a 4 ft. space in all directions round each bed. Then from this 4 ft. space throw up the top soil on to the space reserved for the bed, taking care not to throw up any subsoil. Make the bed about 1½ ft. high to start with. Then at the corners of the seedbed, where the pegs are, place firmly in the ground stout posts, on the east side 4 ft. high, and on the west side 3 ft. high from ground level. If these posts are cut 4′ 6″ and 3′ 6″ respectively, they can be knocked into the ground until the required height is reached, and will be quite firm enough to hold the shade-thatch. Now between these posts along the length of the bed the distance will be 20 ft. This must be divided up into 4 spaces of 5 ft. each, and at each 5 ft. posts must be set in the ground like the first ones. So for each seedbed five 4′ 6″ posts and five 3′ 6″ posts are required. When these are firmly set up and in line, 5 cross pieces of 4 ft. length are laid across the front and back posts and securely tied, either with wire or string. The posts should be cut with a prong at the top end, or a 2 inch nail can be driven in near the top to act as a rest for the cross piece. On top of the cross-pieces in a North-South direction 4 rows of bamboo or small straight wood should be placed at 15 inch intervals,—these are to hold the thatch and should be in 12 ft. lengths, so 8 pieces are required for one bed. On top of these bamboos guinea grass is placed with the stalk end pointing upwards towards the East, leaving the leafy part to hang down towards the ground. The guinea grass is secured by placing split bamboo on top of it, also at 15 inch intervals and tying to the lengths of bamboo or straight wood below at 1½ ft. intervals. When the guinea grass is firmly secured as thatch on top of shade-frame, place a

line along the lower end of frame from end of crosspiece at one end to end of cross-piece at other end. With a cutlass, and holding a stout piece of wood under thatch, chop off the overhanding length of grass along this line so as to have a straight edge along bottom of shade. The top edge of thatch can be made straight by merely patting the grass stalks level before chopping off the lower edge. Now the thatch is ready. This shade is necessary for two reasons,—firstly to keep off the sun at the hottest time of the day, and secondly to keep off heavy rain. The beds are made facing East, so that the shade-thatch will not prevent the early morning and late afternoon sun reaching the surface of the bed, thus promoting germination and later hardening the young seedlings as they grow, so that after about 30 days the whole shade may be removed and the bed exposed to the full rays of the sun for the final hardening process before the suckers are transplanted to the fields. This should last from 10 to 12 days, thus making the suckers 40 to 42 days old.

Another form of shade for seedbeds can be made by placing bamboo hoops at 4 ft. intervals across the beds, and over these hoops stretching calico or cheesecloth. The hoops should not be more than 1½ ft. high at centre, and the cloth should be fastened down at each end so that heavy rain will not damage the bed.

Before the seed are sown the surface of the bed must be prepared. The top layer of soil should be made fine and clean of grass, twigs, etc., and then levelled off. If a chemical guano is to be used, this should be well mixed with half a kerosene tin of fine dry soil; then the mixture should be evenly sprinkled over the surface of the bed and worked in with the hand to a depth of about 1½ inches to 2 inches. The surface of the bed should then be levelled off again, and all lumps broken up, then thoroughly watered to make the surface sink, so that when sowing has taken place, subsequent watering will not bury the seed and so prevent them from germinating.

Measure for Seed.—For a 20 ft. by 3 ft. bed, 1 heaped teaspoon to 1 tablespoon per bed, according to the quality of the seed.

Sowing.—To sow the seed take ½ of a kerosene tin of *dry* sifted sand, pour into this your measure of seed, and thoroughly mix by hand, so that the seed are well distributed throughout the sand. Then carefully sprinkle the surface of the seedbed with the sand, first across the bed, then lengthwise, so that no part of the upper surface of the bed remains uncovered by sand. This must be done as evenly as possible, so that there are no heaps of sand here and there. Sow in the afternoon, and for the first 6 days the beds must be kept moist. That means that, except in rainy weather, the bed must be watered 3 to 5 times a day and never allowed to become dry. The watering-can used must have a fine rose or spray, so that the force of the water will not bury the seed.

Precautions against Ants.—To keep ants away from the seed it is advisable to water the bed *before* the seed are sown with boiling water into which a solution of kerosene and soft soap has been mixed, then after sowing, place pieces of newspaper on top of the bed and water this with *cold* water and kerosene-soap emulsion. Place pieces of wood on top of paper to keep it down, and go on with watering on top of paper until the seventh day when the seed have burst and are appearing as green seedlings. The water will penetrate the paper and is sufficient to keep the seed moist. Ants have no further use for the seedlings once they are green. If ants are not numerous one can dispense with the paper, and water the seedbeds once with the *cold*

water and kerosene emulsion for safety, as seedlings are not so weedy, when they come up naturally without any paper covering. Remember to destroy all ants' nests in the vicinity of the nurseries by pouring boiling water and kerosene emulsion or Jeyes over them.

Do not pour boiling water on to seedbeds after the seed have been sown, as this will kill all tobacco seed, and nothing except some of the hardier grass seeds will germinate! If, in spite of above precautions, no successful germination has taken place, owing to ants taking seed away, the seed should then be sown in boxes, which are raised on bricks, which stand in water or tar. After germination do not water too much and on the 12th to 15th day the small seedlings should be dibbled out to beds, which have been made ready to receive them, by placing them about 1½ ins. apart. A small coffee spoon is the handiest implement for dibbling out such small seedlings.

Care of Seedlings.—After seedlings are 10 to 15 days old, they must be thinned out by spacing them 1½ ins. apart. This is done by throwing away all poorer seedlings from between the good ones and transferring good seedlings to empty spaces on bed, so that the bed is covered completely by good seedlings properly spaced. After 18 to 20 days the bed will have to be gone over again to weed out all weak-looking seedlings and late comers, also any grass which has grown up in the meantime. After 25 to 30 days, when the seedlings should have leaves as large as a half-crown, the shades should be lifted off the beds, and for the following 10 to 12 days the seedlings are open to the full rays of the sun to harden them before transplanting in the fields. The right size for a plantable seedling is 6 to 8 ins. from root to heart. Plants should be strong with stems as large round as an ordinary pencil, and from 40 to 43 days old. If wet weather prevails, hold off watering seedbeds, and plant out seedlings of 45 days as the harder the stem the less likely is *Pythium* (fungus disease) able to take a hold of the plant. To prevent *Phytophthora* (another fungus disease), otherwise "damping off," it is advisable to spray beds with Bordeaux mixture, and water as little as possible in damp weather. Bordeaux mixture can be sprayed every fourth day, or Cheshunt mixture can be used instead of Bordeaux mixture. To kill the flea-beetle and caterpillars, spray plants with a 1 to 1½% solution of lead arsenate. This can also be used in conjunction with Bordeaux mixture by mixing in 1 to 1½% lead arsenate with the Bordeaux mixture, and so in one spraying both preventing fungus disease and damage to the young leaves by insects.

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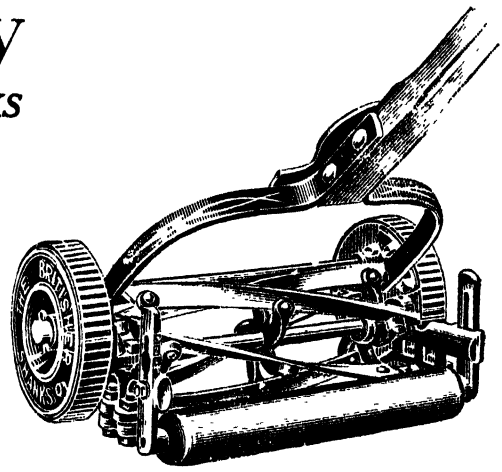
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(Continued from Nov.-Dec. Issue.)

IMPLEMENTS.

Let us consider here the question of implements—evil practice No. 3. The hoe (of one design) machette or cutlass, with a fork and spade thrown in, have come down to us as heirlooms of this past period. And with the type of land available, land of difficult contour, studded with stones and woodroot, these implements were admittedly most suitable, and deserve a high place in the landmarks of the evolution of things; no one will deny them their place in future operations, suitable as they are for many things, and taking into account the skill with which the small cultivator wields them. But having regard to their almost total unsuitability for cultivation of the better, finer crops; having regard to what might be done in proper preparation of land, in labour saving, by better implements designed to secure greater efficiency, the machette and hoe have been lonely for too long.

And because they tend to the destruction of crops when used in cultivation—take the damage of the hoe used carelessly on a potato crop —they have the negative influence of reducing efforts at cultivation of crops during their growth. Thus apart from helping, they hinder progress. This is not to be wondered at, having regard to the amount of manual output contingent on their use.

To-day, with lands better suited for more efficient cultivation at the disposal of the small holder, and with suitable implements on the market, it is distressing that the use of some of these implements is the exception rather than the rule. Admittedly the cost is comparatively high for individual ownership, but with the interest manifested in the communal purchase and use of sprays, as an example, and with such excellent organisations as Branch Societies, cost should not constitute a serious obstacle.

In this connection reference might be made to the lack of the use of animals to labour for the small holder. The world has left him two stages behind. It has passed from man-power to horse-power, to the power unit—the motor. Most cultivators are still at stage number one. A man and a boy with a small cultivator and a not necessarily young mule, will cultivate three acres of potatoes per day—cost, 1/1d. per acre. So much for some of the evils which have come down to us from the vogue of a period which has nearly passed.

"SHIFT SYSTEM."

Let us now glance at the change which is taking place before our eyes, pausing to take stock of that other small but very serious phase —the "shift system" which is based on landlord and tenant, where the small cultivator takes on a small plot of land, cultivates it for a period of time and passes on to another plot. This system also carries with it a trail of iniquity.

Here is a phase of destruction with no consequent responsibility. The landlord desires mostly that his land should be cleared for, say,

guinea grass and the most expeditious manner of "destroying" this land was to get a tenant to do so. On the part of the tenant his interest extended to one or two crops. He found fertile, virgin land and exploited it, because he could, and was required to pass on to more fertile virgin land, there to repeat the process. This phase must simply be borne in mind and considered with the next phase, namely, that in which the small holder acquires security of tenure over plots of land, of varying acreage, which plots will continue to be his and his descendants for better or for worse for all times.

There could not have been devised any system preambular to this last which was capable of more harm than the "shift system."

Security of Tenure.

The maintenance of fertility of the land under the "shift system" was a last thought, the maintenance of fertility under security of tenure system should be a first thought. Exactly how the system just passing has reacted on the system now in vogue may be heard from the lips of hundreds and hundreds of small holding people—how their plot, the dream of their life, after but a few short years have been, according to them, "worked out."

This would be evidence if we were to set out to examine just how far a system of Agricultural Education designed to apply to one period is suited and adaptable to another period, and if it is not, just how it has failed.

Off the bat it might seem to be simply a question of multiplicity of men, and therefore, finance; but if we had the time and the scope of this paper permitted, I should try to show you that this is but the fringe of what is a serious question.

On the surface, the preliminary step would seem to be the scrapping of all traditional technique except where this technique might be suitably applied to a changing system.

One method of technique stood the test of production under one system of Agriculture designed for certain needs. Now there are other needs and other conditions. Further, the system might have been applicable. But it has been tried and has failed.

Old methods must go. It will need courage, for the business of teaching one's grandmother to suck egg is not pleasant.

Issues of Policy.

But this is purely as regard detail; as regard policy, greater issues are involved.

At this stage we must realise that the settled period is here—the small holder has passed through various systems of land tenure and arrived at security of tenure.

Coincident with this change is the prospect for export of crops with limitations upon them—in other words a change from yam to Irish (if you will) potatoes.

I would like to impress upon those who undertake the agricultural instruction of the small holder, how serious are our responsibilities to this situation; and I would leave that thought with them while we survey briefly a few of the problems of details which have arisen with this new system.

Here are a few of these problems:

(1) Maintenance of soil fertility: As we saw in the shift system, fertile, virgin land was available, up to a point. New and more fertile

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land was again available. This land, when once used went into rotation, was subjected to depasturing and was therefore potentially available for subsequent cropping, this result having no connection with the cultivator himself.

The method of cultivation did not have, not even as a minor aid the upkeep of the fertility of the soil.

This same method, save in the older settled districts, are being carried out on new, permanent settlements with disastrous results.

(NOTE.—*Older districts reached security of tenure long ago; now benefit from experience.*)

Here, then, was a change in tenure without a change in system. (Putting new wine into old bottles.)

The recent settlement at Kellets, and many others which I could name, are examples of the rapid deterioration of land due to the continued use of methods suited to shift system in a system of security of tenure.

On the other hand let us review the work of the older settlers in the parish of St. Elizabeth, without doubt the most efficient of all small holding cultivators, and see what lessons we can learn from them.

i. There is their rigid rotation of crops with one leguminous crop.
ii. There is the system whereby at least one crop *which is not a money crop is grown.*
iii. There is the liberal use of animals primarily for their manurial effect on the land.
iv. There is preparation of land well in advance of planting time.

ROTATION OF CROP.

With regard to (i) Cassava and Potatoes are followed rigidly and regularly with gongo peas—one leguminous crop well suited to the district.

With regard to (ii), there is the use of guinea grass as a fallow, to be used in due time for mulching crops.

Here we have one crop, not a cash crop, which plays a vital part in water conservation, and the regeneration of that portion of the land which has for some time produced a cash crop.

Invite a man with a holding suitable for producing, say, bananas, to let one section of his land fallow or be planted out with a crop not directly a cash crop, say one of the legumes, and he would most likely feel that you were fit for the occupation of a place for the mentally deranged.

But for much of the deteriorated settled plots the only hope is for the growth of one of those leguminous covers or erect-growing legume crops, which has engaged so much of our attention within recent times, and which should be grown not for money return but for green manuring.

A bushel of overlook beans will plant one acre at 18″ x 18″; two day-work women will plant it in three days. At the end of three months it will produce five tons of green stuff to the acre. Gongo and Jerusalem peas, Cow peas and Bengal beans are well known to you; Crotalaria, Controsema, Indegophera, Tephrosia should soon be well known to you. All these are as full of possibilities as the Overlook beans. A personal opinion is that if we do not begin seriously to work these crops into the scheme of things greater disaster awaits us round the corner.

The potato cultivator in Manchester has already discovered to his benefit the value of a crop of cow peas turned under during the Fall to his Spring potato crop.

There is of course, some sceptical person with unbelievable views on "covers" and green manure, but like every phase of Agriculture, care and intelligence must be observed in its use. It is for us to fit them into the scheme of things in the various districts.

The use of Animals: Details of the method of penning well in advance, of conservation of manure and its use as practised in Saint Elizabeth, is well known to you; if it is not, no time should be lost in familiarising yourselves with the routine.

Now this question of animals on small holdings is intimately bound up with the progress of the times. More and more roads stretching into the remotest settlements are constructed, and motor lorries thunder over them, bringing markets nearer and nearer to holdings, and driving the animals further and further away from them.

Soon the good, faithful, patient donkey will be a thing of the past. Perhaps that is why one Society, at least, has started a scheme to be kind to him.

The fact is, that the urge to keep stock—that is, as beasts of burden to transport produce to markets—is passing rapidly, and with the passing of the urge the animals themselves are passing more rapidly.

It were futile to inveigh against motor trucks for they are contributing in brave, though noisy fashion, to the progress of the settler; it will be futile to endeavour to keep animals on the farm either by moral suasion or on a basis of sentiment. One thing is certain, the absence of animals from holdings is another most serious aspect in the matter of maintenance of soil productivity and some new urge other than those referred to must be found. It is suggested that new and improved implements, animal-drawn, and suited to the needs of the small holder, is one way which appears to be full of possibility.

Planting Crops.

The lecturer was dealing with the question of planting crops and continued:—

It would seem, I repeat, that this question is rooted in the temperament of the tropical cultivator. At best, a suitable date (as has come down by tradition, or fixed arbitrarily by a certain almanac, and perhaps after certain cryptic references to the moon) has been selected for the planting of a crop. You know the rest—how at the minimum period of time prior to this date feverish preparation is begun, and the poor crop is got into the soil somehow.

Use of Fire.

Chevvied by time, the small-holder resorts to the most expeditious method of preparation and his almost first henchman is the accursed FIRE. There are Laws, of course, but what are Laws made for if not to be broken? Much may be said about FIRE, but let us content outselves to-day with the thought that it is not to the protection of the Law that we must look for remedy of this vile evil, but to a system of agriculture which will influence the temperament of the cultivator, and fit him for methods of cultivation along higher lines. One more opportunity for these new and delicate crops—vegetables for instance—which will carry the settler away from those crops which simply demand casual

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intermittent attention, to those which demand constant care and control will educate smallholders to look ahead and so forget FIRE.

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One other striking evil which results from this hurried preparation of land is the dumping of all vegetable growth and accumulation to borders and pathways, so that eventually those places which grow nothing are most fertile.

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With regard to the Small Holder System in St Elizabeth, it should not be necessary to observe that the rigid copy of a system which, despite the high water mark which it has reached, is still capable of improvement in itself, is not advocated. Every district with its varying soils and conditions and crops and needs must apply these technique after a manner suited to their individual needs; but so far there is no apparent attempt at any improved system calculated to meet the new system of tenure of land, and so stem the start of this rapid deterioration of land which is proving so disconcerting.

The opportunity should not be allowed to pass without paying a sincere tribute to the work and worth of those sturdy people, of enviable character, of the hard plains of St. Elizabeth.

(To be continued.)

CORN.

It has been noted from experiments in the Philippines that in selecting corn for Seed purposes from stalks bearing two (2) ears, that the upper ear is definitely the better of the two.

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We produce below a very interesting article on the consumption of Alcohol and its cost to, and effects on, the colony. The Editor cannot, of course, subscribe to every opinion expressed in the Journal, but has pleasure in publishing always matter that represents every angle of any question that bears on the welfare of the Colony. This article is a very thought-provoking one.

EDITOR.

SOME EFFECTS OF ALCOHOLIC CONSUMPTION ON HEALTH AND SOCIAL CONDITIONS IN JAMAICA.

By DONALD MACDONALD, Accountant, J.A.S.

In Jamaica the consumption of Alcoholic drinks has assumed such large proportions that the Revenue obtained from the Taxes, Licenses, and Fees imposed on the importation of all spirits and spirituous compounds, as well as those locally produced which includes the storage and retailing of the same, has now become one of the mainstays of the Island's public Income

To give an idea of the volume of our local liquor traffic it is necessary to look over the statistics published annually by Government directions, which contain the most reliable information available. So commencing with Rum, which is by far the popular favourite, it is observed that the proportion of our public income which we expect to obtain from the Excise Tax of 8/- per gallon is set down at £218,000. To obtain this amount, it means that no less than 545,000 gallons of rum must pass into the hands (or down the throats) of the consumers in the course of a year. Converting this large quantity into the more popular unit in which it is put up for public convenience—that is, in pint bottles—we arrive at a total of 6,540,000 pints likely to be consumed, in order to produce the estimated amount of Revenue. The Collector General tells us that during 1935 we imported 22,673 gallons of Whisky, equivalent to 136,038 quart bottles; Brandy, 2,021 gallons; Gin, 4,233 gallons, and so on, from which it is possible to arrive at the following statement which is as close an estimate as possible of the quantity consumed and the amount expended on alcoholic drinks for one year:—

	Gallons.	Bottles.	
		Equivalent to:—	
Rum ...	545,000	6,540,000 pt. at 1/8d.	£545,000
Brandy ...	2,021	12,126 qrt. at 12/-	£ 61,276
Gin ...	4,433	26,598 qrt. at 10/-	£ 13,299
Whisky ...	22,673	136,038 qrt. at 12/-	£ 81,623
	574,127 gallons.		
Wines, sparkling	2,061	12,366 qrt. at 15/-	£ 9,275
Wines, still	14,757	88,542 qrt. at 6/-	£26,563
Beer, Ale, and Stout, (Imported)	134,062	1,608,744 pt. at 1/-	£80,437
Beer, Ale and Stout (locally manufactured)	169,162	2,029,944 pt. at 6d.	£50,786
Cider	1,064	6,384 qrt. at 2/6d	£798
			£869,057

One of the outstanding features of our last Health Week demonstrations was the enthusiastic and earnest manner in which the Hon. C. C. Woolley, then Officer Administering the Government, and other high officials identified themselves with the movement which was organised for the specific purpose of throwing light upon important subjects concerning our Public Health on which we are still very much in the dark.

As the subject of Alcohol and its effect upon the health of the community was not touched on to any appreciable extent, and in view of the large quantities consumed here annually as indicated above, it seems appropriate to acquaint our readers with some of the discoveries that have been made as a result of extensive research on the question as to whether Alcohol is of benefit to us or not.

In 1916 the British Government decided to investigate the subject for the benefit of the General Public and appointed a strong Committee of the Medical Research Council to obtain all data available with the view of arriving at what effects on health and industrial efficiency are produced by the consumption of beverages of various alcoholic strengths.

The Committee in due course met and presented a Report, but frankly admitted that they had only been able to touch the fringe of this important and complex subject, and that a good many questions remained unanswered or were not completely solved. After a good deal of further research in which some of the world's greatest scientists rendered invaluable assistance, a second report was prepared and submitted in 1920, though this was not made public until 1923 after all the findings had been gone over again and carefully checked to a fine point, so as to be absolutely certain that any statements made did not misrepresent in the slightest any phase on which doubt existed or were laid open to successful contradiction

It is from this Report that the main facts of this article are obtained, supplemented by further information gained from other sources of an equally reliable nature.

It is therefore quite safe for us to rely on the statement that no more authoritative work from the layman's point of view exists to-day on this particular subject, which is borne out from the fact that these findings are frequently quoted in other publications recently issued, so we may be assured of the valuable nature of the information given out for the benefit of mankind.

So far as we are concerned, if we confine ourselves for the present to a few of the main essentials on which we are almost totally lacking in knowledge more might be gained than if the formidable array of facts were lengthily let out and explained.

So we will get down to our subject by asking a few questions such as the average person with a desire to improve his knowledge would prefer to have answered without being bothered with lengthy explanations.

1. Does Alcohol produce any harmful effect in our bodies?

2. To what extent may we follow the example contained in the Biblical statement which recommends "a little wine for the stomach's sake?"

3. What do we stand to gain by abstaining entirely from the use of Alcohol.

The facts on which the answers to these questions are based have been worked out scientifically and have been accepted without question

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among all civilized people as they co-ordinate the efforts of the ablest scientists of Great Britain, the U.S.A., Germany and Austria.

To begin with, the majority of us take a drink for the good feeling that it promotes, and after a hard day's toil, it is difficult to be convinced that a nice Rum and Ginger or Whisky and Soda does not work wonders on a tired brain and jaded body. Aided by clever business statements, some of which have emanated from reputable physicians abroad who have in some cases been paid to say certain things, we have been gradually coming to the conclusion that Alcohol is an aid to health and that consumed in moderate doses our well-being is preserved.

The first upset that the scientists sprung on the British Public was the fact that Alcohol is not a stimulant but a Narcotic. Assuming that we are all well versed in the meaning of the word stimulant we will copy word for word the description of Narcotic as explained in the Encyclopedia of the World Research Society Ltd.

Narcotic:—

"A substance which has a stupefying or benumbing influence. Narcotics behave variously. In medicine they are used to produce sleep or to relieve pain. The chief narcotic is opium with its preparations, known as morphine, laudanum, and paregoric. Opium contracts the eye; belladonna dilates the eye. Other narcotics are: hops, henbane, stramonium, camphor, chloral, Indian Hemp or hashish, and bromide of potassium. Soothing syrups, painkillers, anodyne liniments, and all similar preparations depend on some narcotic, frequently opium, for their efficiency. Children are particularly susceptible and should be given exceedingly small doses, if any. Alcohol in all its forms—ale, beer, wine, hard cider, rum and whisky is a narcotic. As in the case of opium, the first effect of a small quantity is a temporary excitement. The final effect, if the dose be large enough, is to produce the peculiar helpless, languid stupor called drunkenness. The well known narcotic influence of tobacco is due chiefly to an essential oil called nicotine; though pure nicotine is a rank and dangerous poison. The trouble with the use of all narcotics is that the nervous system becomes used to artificial soothing and demands more and more of it until the victim of a narcotic habit is enslaved."

We now see that the effect of a Narcotic is exactly opposite to that of a stimulant (Ganga is a good example of a Narcotic). The effect of a Narcotic tends—to use the language of mechanics—to release the emergency brake which keeps our emotions in check and prevents us from flying off at the deep end if our purposes are crossed. That is one of the reasons why many people with worries—real or imaginary—fly to drink as a solace—it helps to blunt one's sensitiveness to unpleasant things, creating a false sense of well-being, "curing" small aches and pains and chasing fatigue from our bodies for a few moments.

As a relief from physical and mental inertia its use has been found to be of such temporary benefit that to obtain lasting results one has to be continually "bending the elbow."

A well nourished and strongly constituted person can withstand a much greater amount of misusage than those with poorer conditions, made poorer by lack of proper food, and sometimes even scarcity of the necessities of life. In the case of the latter, these suffer from the misuse of Alcohol, as it has been found that alcoholic beverages may *cause*

disease and *aggravate* diseases which result from such infective germs as Tuberculosis, Influenza and Pneumonia. It is also a well established fact that wounds, sores, ulcers, and cuts heal much more slowly in persons who are regular consumers of strong drinks. The writer often sees reports in the daily newspaper of the prevalence of ulcers among the inhabitants of certain country districts and hopes that this useful knowledge will be passed on by readers to their less fortunate brethren.

It was also found some years ago by an American Scientific Body which visited these shores, that our peasantry exhibited a very low standard of physical development and stamina. They attributed this as mainly the result of a poor diet, and strong drinks, and arrived at the conclusion that most of our labourers were old and fit for the scrap-heap at 40 years. Another exploded theory, and one which has misled almost everybody in this Island, is that alcohol aids the digestion and that at meal times it is a beneficial accompaniment. It has been proven that although alcohol increases the flow of the gastric juice, the composition is different than is the case in normal functioning, and that much of the pepsin so necessary to obtain good digestion is absent, which is a disadvantage instead of a help as was at first intended. In the case of Wines the Medical Research Council has this to say:—

"Wines, especially red wines and sherry, retard digestion much more than can be explained by the Alcohol they contain, evidently owing to the activity of some other constituents.

"Wines and Beers have a retarding effect out of proportion to their content of alcohol, an additional, and more powerful factor here being the acidity of some wines"

With such reliable information in our possession, especially the fact that alcohol does not stimulate—but on the contrary depresses—it appears necessary to start at once by completely overhauling our habits of living—if only to obviate the use of alcohol as a means of restoring dissipated energy, a condition that may be prevented by a proper combination of foods and care in avoiding over-indulgence at the table. Overeating has been blamed, and rightly so, by eminent investigators for setting up toxic conditions in the body which cause us to experience feelings of heaviness and weariness, sometimes headaches, accompanied by a general sense of weight and depression. Excess of protein in the dietary and faulty selection of foods put so much work on the eliminative organs that alcohol is resorted to more in the nature of a whip to force them to do more work so that we may feel up to par.

Present day knowledge condemns this practice as a physiologically unsound one, and suggests as a remedy better eating, especially of natural foods which we can produce abundantly here and less reliance on artificially processed foods such as white flour, canned meats, soups, fruit, etc., which are known to contain substances which retard proper elimination and load the system with toxic residues. It is significant that the scientists were unable to contradict the little indulgence allowed us by the Apostle in the Bible, for they did not find any harmful effects in those who took "a little wine for the stomach's sake," but the habit of the daily drink was condemned because this tended to maintain a constant amount of alcohol in the blood stream which is very undesirable as an accumulation is capable of seriously damaging the tissues of the body. No harmful effects were observed in the case of

normally constituted individuals who occasionally overstepped the mark, but a strong recommendation was issued never to consume spirits except in a very diluted form.

Milk is an ideal combination with Rum and Whisky, and hard drinkers are urged to form the habit of diluting their drinks with this pleasant liquid. Its benefits are manifold and cannot be too highly stressed, as it helps to lessen considerably the dangers arising from over-indulgence.

It remains now for us to consider what beneficial effects on the community would be experienced if we were to cut out or at any rate considerably reduce our consumption of alcoholic drinks. In a community where there is so much all-round lack of general knowledge, it is safe to say that there is much misuse of spirits by persons who know nothing at all of its action on their bodies. We are careful when taking medicines to measure with much accuracy the prescribed doses and no one would attempt to exceed the quantity that the doctor prescribes. The same care is necessary in the use of alcohol. According to well-founded opinion the misuse of alcohol is one of the main causes of Crime and Poverty, beside exercising considerable influence on the health and efficiency of a community. Let us see if any of those opinions are reflected in our own social conditions here. As we have already seen, no less than 574,127 gallons of spirits, in addition to beer, etc., were consumed in the course of a twelve-month period, approximating in value £869,057, or 16/- per head of population.

Our importation of Medicines and Drugs amounted to £73,146 in 1935, which was £10,265 more than the quantity imported 5 years ago, and £8,648 over the previous year's (1934) figures, which points clearly to the fact that there is a great increase in sickness and disease taking place around us at present.

It is also true that Poverty is increasing alarmingly over the Island, and crime shows no signs of diminishing. Large numbers of persons during the last Christmas season were in straightened circumstances, though a brave effort was put forward to conceal their misery caused by empty pockets and the sight of the more fortunate ones engaged in their Christmas Shopping and enjoying themselves.

Now let us contrast our own situation with conditions in the Mother Country and see if there are any lessons to be learned from the example of the British Public. In 1916 when the Alcohol Investigation Committee commenced its work, the British Public consumed 29,646,000 barrels of Beer and 35,597,000 gallons of Proof Spirits during that year. With the knowledge placed at their disposal that alcohol had not stimulative properties of any importance, but on the contrary produced narcotic effects, and that its misuse was a serious menace to health, we find a remarkable response to the teachings of Science, resulting in a tremendous decrease in the consumption of these drinks so that the figures for 1923 went down to 19,809,000 barrels of Beer and 15,158,000 gallons of Proof Spirits. What has been their reward for exercising such sound commonsense and restraint? London's shops were unable to cope with the tremendous rush of Christmas shoppers this season. One London newspaper graphically describes the situation making reference to *full* streets, *full* shops and *full* purses. The shops were unable to cope with the crowds and some had to lock their doors and re-open at intervals to let shoppers in as others came out. More than 3,000 people were observed in one queue trying to gain entrance to one of the shops.

Britain's wave of prosperity has aroused the admiration and envy of the world. Her spectacular recovery from the whirlpool of the depression may be traced to the united efforts of all classes to reinstate the Old Country to the premier position to which she has succeeded by honest toil and right living.

In stressing the need for certain social reforms, one famous authority writes: "The idea of curtailing some indulgences and embarking on a career of abstinence and discipline assumes the form of a '*pons asinorum*' and it is in very truth a bridge over which asses will not venture!"

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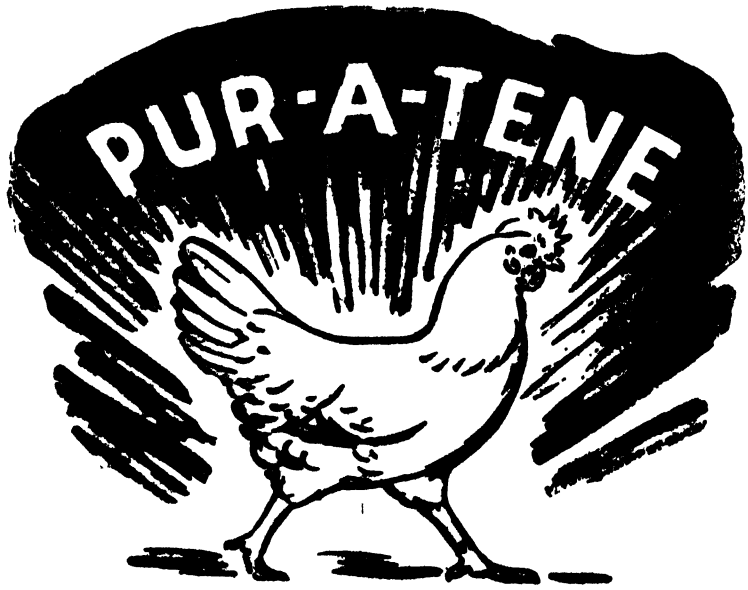
FOR SALE.

PURE BRED WHITE LEGHORNS PLYMOUTH ROCKS

BLACK MINORCAS RHODE ISLAND RED

All imported or from imported stock. Carefully selected foundation stock for those interested in starting a Poultry Farm. Well mated pairs, trios, and Pens for Breeding. Hatching Eggs from selected Pens of proven layers, 90% fertility guaranteed. Day old chicks from above breeds.

ANDREW AGUILAR, Phone 3059.



ALL

PURINA

POULTRY CHOWS

(Except Scratch Grain) Contain

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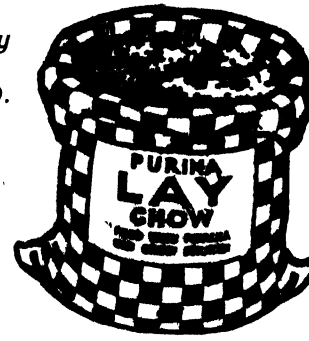
Concentrated Vitamin "A"

To give healthier fowls - To produce more & better eggs.



Scientifically

BALANCED.



Sold by:—

Jamaica Agricultural Society,

The Army and Navy Stores

and the Favourite Grocery, Half-Way-Tree.

See that you get "PURINA" - - If in doubt, ask us.

EWAN D. MACDOUGALL--Sole Agent--20 Church St., Kingston.

FERTILIZERS.

Cave Earth Used in St. Elizabeth.

Mr. Hanson, our Supervisor of Instructors, came across some material that is being very generally used by small farmers in St. Elizabeth as fertilizer for certain of their crops. They claim that such crops as tobacco and cabbages grow luxuriantly, but that the cabbages become very coarse and the burning quality of the tobacco very bad.

A sample of this material was submitted to the Department of Science and Agriculture for analysis by the Government Soil Chemist and the following result was submitted:

The sample contains the following amounts of nutrients:—

Total Nitrogen		1.07%
Total Phosphoric Acil (P_2O_5)	...	16.38%
Total Potash (K_2O)		1.61%

The sample contains also 15.43% of Sodium chloride (common salt).

The nitrogen content appears barely sufficient to induce luxuriant growth unless large dressings are given. It is probable that the composition of such earths varies considerably, and the present sample may be particularly poor.

The effect on both cabbages and tobacco is due to the presence of the chloride, and the lack of readily available potash.

Fertilisers with this high content of chloride should not be used for tobacco, and no treatment can increase their suitability.

Cabbages may not be so severely affected by the chloride. It would be worth while determining the effect of an addition of a small amount of Sulphate of Potash with the earth An application of about 1 teaspoonful of Sulphate of Potash to three cabbage roots should be sufficient."

It will be seen by the above that this material is by no means a complete manure.

The worth of the material delivered on the spot which is to be fertilized would be somewhere around £3 10/- per ton.

The material could, however, be made into a valuable manure by the addition of other ingredients to properly balance it. In any case, however, those crops that have their quality adversely affected by the presence of sodium chloride should not be given this fertilizer.

Sodium chloride is common sea salt, and tobacco is one of the chief crops whose quality is seriously affected by salt.

FOR FISH MANURE
AMO-PHOS
ROLL-CUT SECATEURS
Barb Wire Agricultural Forks Budding Knives
GO TO
STIVEN'S COLOSSEUM, LTD.
113 HARBOUR STREET, KINGSTON.

GET
READY
for the
1937

KNUTSFORD PARK
SHOW

* * *

WEDNESDAY,
24th February, 1937.

* * *

Hon. Secretary,
H. LEO BROWN,

101c Orange St.,
Kingston.

IF NOT.....
WHY
NOT?

IF YOU HAV'N'T AN
INSURANCE POLICY
with us ask yourself why not?

Our rates are the lowest possible. For, from 3d. a week upwards WE INSURE YOU against absence of cash during times of illness and accident and at death sufficient to bury you decently with a little left over for your dependents.

THE COSMOPOLITAN ASSURANCE CO., LTD.,
116½ Tower St., Kingston.

H. LEO BROWN, CHAIRMAN.
G. R. BOWEN, SECRETARY

B. L. WILLIAMS

Customs Broker & Shipping Agent
12 Port Royal Street, Kingston,

WILL SHIP YOUR PRODUCE TO ANY PART OF THE WORLD.

All Shipping Documents put through speedily, and at minimum trouble and expense to you.

My Efficiency and Reliability always at Your Service.

LIGUANEA AGRICULTURAL SHOW.

TO BE HELD ON THE 24TH FEBRUARY, 1937, AT KNUTSFORD PARK.

We are commending to the support of our members and readers the Agricultural Show to be held at Knutsford Park under the auspices of the Liguanea Branch of the Jamaica Agricultural Society.

The Committee, under the very energetic chairmanship of Mr. W. A. Dillon, is using every means at their disposal for making the Show a Big Show, a Good Show, and the day a very enjoyable and instructive one for its patrons.

The Prize List covers everything that an Agricultural Show should cover, including horses and other maned stock of various classes, and cattle of meat and dairy breeds, small stock, poultry, rabbits, caged birds and Bee Industry exhibits, all the agricultural produce of the Island and the usual household industries are also included. There are also going to be many interesting trade exhibits, as the commercial section of Kingston and some other towns are availing themselves of what will be a unique opportunity for the display and advertisement of the commodities they deal in. The Hope Stock Farm and the Parent Body of the Jamaica Agricultural Society will be both staging displays.

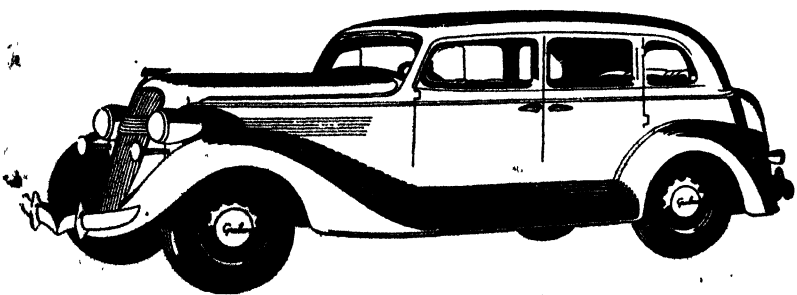
The evening will be filled in with interesting and amusing gymkhana events. Not the least of the attractions will be the Flower Show, the section for Horticultural Exhibits. Special efforts are being made to bring to the attention of tourists present in the Island at the time, how interesting this Show promises to be, and a large attendance from that transient section of our community is sure to develop, especially as one or two large tourist liners will be in our harbour on that day.

From entries and promises already obtained, exhibits will be representative of every section of the Island, and our advice, "Come to the Knutsford Park Show" is sure to be productive of a most pleasant and wholesome afternoon's and evening's entertainment.

Graham

25--30 Miles on One Gallon Gasolene is a Matter of Actual Record.

THE CAR THAT BEAT THEM ALL



L. R. DePASS,

6A & 68 King Street, Kingston.

LASCELLES, DE MERCADO & CO. LTD.

14½ Port Royal Street,

KINGSTON.

SEE US FIRST !

—WE BUY—

COFFEE (Clean & Parchment) **COCOA** (Wet & Dry)

GINGER **HONEY**

PIMENTO **ANNATTO**

GOATSKINS

AND ALL OTHER ISLAND PRODUCE.

Are you Buying LASCELLES Ground Coffee ?

Sold Everywhere in the Famous

2 oz. & 1 oz.

SEALED PACKETS.

2 oz. for a quattie.

1 oz. for a gill.

LASCELLES, DE MERCADO & CO., LTD.

KINGSTON.

(Extract from Weekly Fruit Intelligence Notes.)

MARKETING NOTES.

IMPORTS OF RAW FRUIT INTO THE UNITED KINGDOM.

Bananas (a):

	January to October.		
	1934.	1935.	1936.
British West Indies ...	8,226,009	14,442,674	12,200,239
Nigeria (inc. British Cameroons) ...	20,155	108,968	262,836
Other Empire ...	1,679	14,138	41,439
Brazil	1,477,311	1,545,543	1,662,357
Canary Islands ...	307,002	249,333	271,730
Colombia	2,546,713	825,453	1,506,896
Costa Rica	160,562	—	62,202
Guatemala	932,321	—	581,866
Honduras Republic ...	860,654	566,575	999,825
Other Foreign ...	998	37,993	133,297
Total	14,533,404	17,790,677	17,722,687

COUNTRY DEALERS

IF YOU ARE INTERESTED IN THE FOLLOWING:

Dietz Lanterns.	Ornamental Fencing and Gates.
Sweat Collars.	Window Glass.
Screws.	Sash Fasteners.
Hinges.	Sash Cord.
Toilet Paper.	Tower Bolts.
Disinfectant.	Twine.
Garden Hose.	Enamels, etc., etc.

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RANDALL'S HARDWARE

90 Tower Street - Kingston.

AND GET OUR PRICES.



Perfect Sight

WORLD FAMOUS

SELLER'S PURE LOTUS HONEY

A reliable remedy for all sorts of

EYE DISEASES.

It cures inflammation of the eyes—Imperfect sight, Bloody eyes, Fleshy growth in the eye, Burning in the eye, Granular eyelids, Leucoma, Cataract, Glaucoma, etc., etc. If used in the healthy eye it keeps the eye cool, and renders it proof against future evils. Literature and prices obtainable from

KINKEAD LTD. 20 KING STREET KINGSTON.

Local Produce Prices.

Annatto	... Well cured, prime, red seed	21/-	delivered Outport
		22/-	" Kingston
Cocoa	... Ordinary	41/-	" "
	Fair Fermented ...	41/-	" "
	Estates Fermented ...	42/-	" "
Coffee	... Good Ordinary ...	32/-	" "
	Fine Ordinary ...	34/-	" "
	Manchester—B ...	34/-	" "
	Manchester—A ...	36/-	" "
Goat Skins	... Sound quality, well cured	1/11d. per lb. dlvd. Kgn.	
Honey	... Water White ...	3/3d.	per gall. " "
	Pale Amber ...	2/9d.	" " " "
	Light Amber ...	2/6d.	" " " "
	Dark Amber ...	2/3d.	" " " "
Kola Nuts	... Sound quality, well cured	12/-	delivered Outport
		13/-	" Kingston
Lime Juice	... Good, fresh, green, top-pulp	1/4d. per gall. delvd. wharves outport.	
Orange Oil	... New crop—Sweet ... Sound quality—well filtered.	4/- per lb. delvd. Kgn.	
	New crop—Bitter ... Sound quality—well filtered.	4/- per lb. delvd. Kgn.	
Sarsaparilla	... Well cured, red roots ...	35/- delivered Kingston, nett weights.	
Wax	... Pure and clear ...	8d. to 8½d. per lb. delvd. Kgn. nett weights, according to quantity.	

(Extract from Weekly Fruit Intelligence Notes, 2nd Dec., 1936.)

Gold Coast.

The *Abosso*, which is due at Liverpool on 6th December, is bringing 2,200 bunches of bananas and 150 boxes of limes from the Gold Coast.

When corresponding with Advertisers, mention the Journal of the

JAMAICA AGRICULTURAL SOCIETY.

The Sun Life Assurance Company of Canada

extends cordial greetings to all readers of this Journal, and again thanks all Policyholders for their continued support during 1936 which has been a success in every way. New business written being 20 per cent. increase over 1935.

SHOP AT

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HANNA & SONS CHAIN STORES

THE HUB—91 King St.
79½ King Street.
BARGAIN UPSTAIRS.
REGENT SHOE SHOP.
KIDDIES SHOP—95 King St.
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RIVAL SHOE STORE—33 King St.
HANNA'S BARGAIN STORE.

WHERE ABSOLUTE SATISFACTION IS GUARANTEED.

F[1°] 2285

USEFUL BOOKS FOR FARMERS

Principles of Veterinary Science—Hadley	...	...	22/-
Types and Breeds of Farm Animals—Plumb	...	...	22/-
Equipment for the Farm and Farmstead—Ramsower		...	20/-
Poultry Breeding and Management—Dryden	...	...	13/-
Principles of Agriculture—Bailey	...	...	10/6

The Bright Yellow Book Store, Church and Tower Sts., Kingston.

—— *Best place in Jamaica for* ——

School Books, Birthday Cards, Office Stationery and Printing.

CAMPBELL & CO., LTD., — 137 Tower St., Kingston.

B. H. M. CAMPBELL —— Managing Director.

EDITOR'S LETTER BOX.

St. Mary,
6th January, 1937.

Secretary,
Jamaica Agricultural Society.

Sir,

I think the J.A.S. should take steps at once to have the scattering of Banana Trash along the public roads stopped in view of the danger of spreading disease.

For some time past the main road for about two miles west of Oracabessa has been used as a dumping ground by trucks on their way back from unloading at the Port. I am told that, in order to save time, in lieu of emptying the trash onto the heap at the wharf for burning, the truckmen fling it out along the road as they pass, where it remains till it rots, spreading any disease spores it may contain.

Bananas to this Port come from very distant places such as Cave Valley and sometimes Bog Walk District. And should there be any "Black Spot" at these or other points on their route it will certainly be brought over here.

I have informed the Police, but I think the J.A.S. should take the matter up strongly as well. Similar practices may obtain elsewhere.

Yours truly,
OLD MEMBER, J.A.S

ED. NOTE.—

This is against the Plant Disease Law and our correspondent should bring the matter to the attention of the local Plant Disease Inspector. We are bringing it immediately to the notice of the Chief Inspector of Plant Diseases.

The Brown's Town Benefit Building Society

ESTABLISHED 1893. INCORPORATED 1899.

SHARE CAPITAL £132,220.

ASSETS £111,499. RESERVE £14,044

GOOD INVESTMENTS. LIBERAL ADVANCES.

EASY TERMS REPAYMENT.

FOR PROSPECTUS AND FULL PARTICULARS APPLY

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DURHAM COLLEGE of COMMERCE,

86 Hanover Street, Kingston,

Offers Specialized Training in Accountancy, Shorthand, Touch Typing and Spanish.

SUCCESS GUARANTEED—POSITION ASSURED

Principal: - - - - - - - - - - A. S. HENRY; F.B.I.

THE REPORT OF THE JAMAICA BANANA COMMISSION, 1936.

(Continued from the Nov.-Dec. Journal.)

SECTION II.—The Constitution and Claims of the Association.

Our terms of reference embrace a general survey of the industry. Since, however, the affairs of the Association are the primary cause of our enquiry, we think it best to base our examination on their position, and in doing so the wider issues must necessarily come under review.

The history preceding the formation of the Jamaica Banana Producers' Association will be found in Appendix B. The Imperial Economic Committee in 1926 was impressed with the need for the organisation of producers in Jamaica for marketing purposes and in their Report recommended to the Government and to producers the study of the California Fruit Exchange, which is based upon binding contracts between the grower and his Association, and the New Zealand form of Statutory control over exported fruit. A result of this recommendation was the formation of the Jamaica Producers' Association, the main object of which was to consolidate the producers of Jamaica into one body for joint protection and co-operative action. On the advice of the Horace Plunket Foundation, the Jamaica Producers' Association did not attempt itself the sale of produce but set up individual commodity organisations to deal with specific products. The most important of these was the Jamaica Banana Producers' Association.

Under Californian Law, farmers' co-operative organisations may be organised either on a capital stock or on a non-stock plan. The practice is also general of requiring members to sign contracts with local associations, these local units being the foundation of the exchange system. Lack of experience in co-operative marketing and of men capable of managing the operations of the local associations, compelled the promoters of the Jamaica Banana Producers' Association to adopt a centralised form of organisation. The effort to provide an organisation which would serve the needs not only of the large planters but of a great number of small and indigent growers caused the leaders of the movement to turn to a non-stock plan of organisation. The initial effort was directed towards ensuring supplies by a contract with growers. The main clauses of this contract were as follows:—

(a) The Contract was to run from April, 1929 for seven years. The minimum price of 2/- per count bunch was to be paid to the growers on delivery and dividends were to be paid out of joint marketing operations of the Association at periods of 1, 3 and 12 months. If over the period of seven years, an average return of 2/6d. per count bunch was secured to the contractor, then the contract was to remain in force for a further 3 years.

(b) Contracting members were to buy shares of 1d. in the Association.

(c) There was to be an Annual General Meeting of the members of the Association in which voting powers were exercised on the following basis: One vote for the first 100 count bunches, and additional votes for every subsequent 200 bunches delivered by the contractor in the previous year.

In order to give weight to the authority of the Association, certain laws were passed in 1928 providing for:—

(a) Stringent penalties for breaking contracts with the co-operative association and these penalties were to extend to any third party who was instrumental in breaking contracts.

(b) The binding of contractors and their land to the Association for the period of the contract.

Subsequent efforts to give greater effect to the Protection Laws and to control the activities of produce merchants and truck owners are discussed elsewhere.

Initial capital was found by the issue of debentures guaranteed by the Government of Jamaica under the Jamaica Banana Producers' Association Limited Debenture Law 1928. The management of the entire operations of the Association was entrusted to the Jamaica Fruit and Shipping Company, Ltd., who had been operating a banana exporting business on a quasi profit-sharing basis. This firm was under contract precluded from undertaking business that might develop in opposition to the Association, and was responsible for management under the direction and control of the Executive Committee and Directors.

The formation of the Association aroused considerable enthusiasm and widespread support. This is still forthcoming from all sections of the community, although considerable criticism exists regarding management and results. With the removal of any grounds for criticism, our evidence shows that approval would be almost unanimous but that approval by no means results in practical adherence.

We must examine the grounds on which this support is claimed by the Association:—

These can be stated under six main headings:—

(a) The welfare of the small settler.
(b) The introduction of the co-operative idea and ideals to the people of Jamaica.
(c) The safeguarding of prices to the producer.
(d) The protection against domination of foreign Companies in Jamaica.
(e) The protection against monopoly in selling markets.
(f) The value to Jamaica of Direct Steamship communication under British control with the United Kingdom.

(a) The Need of the Small Settler.

A considerable proportion of the land in Jamaica is occupied by small proprietory cultivators and their economic and cultural development cannot fail to be a factor of great importance in the future prosperity of all sections of the community.

The small cultivator leads a hand-to-mouth existence, and it is essential that some portion of his production should be readily convertible into cash week by week. The banana at present, in the main, fulfils this function and has the advantage of being suitable for cultivation in small areas, requiring no elaborate equipment or special technical skill.

The Association claims that it has been a special service to the small settler, more particularly in extending to him the security of contracts and providing a market for the whole of his crop including six-hand stems. Table XIV shows that 96 per cent. of its contractors (covering 58 per cent. of its acreage) represents growers of less than 10 acres.

We recognise the value of these services to the Island. With an expanding population and the closing of past opportunities for emigration, the problem of providing an economic livelihood for the small settler becomes even more insistent.

In this connection we made an attempt to compare the wages provided by large estates with the money receipts plus subsistence obtaining from a small holding—variations were too great for our limited enquiry to yield any conclusive figures. It suggested, however, that on the irrigated estates total earnings per acre are usually greater than on a similar area under small holdings, on unirrigated it is less. Employment ranged between one man for six acres to a maximum of one man per acre.

We are impressed by the number of cultivators who have told us that they felt encouraged by having an Association "of their own," and who have given practical evidence of their support.

We agree that at present for the small settler the banana is of supreme importance, but we would wish to support the efforts now being made to develop alternative crops. The need for improved sugar cultivation, although not so directly affecting the small cultivator is vital to the Island's interest as a whole. The menace of Panama Disease hangs like a cloud on the horizon and the very factors that have led to the banana industry's rapid establishment in Jamaica will aid competitive development elsewhere by less advanced communities content to accept a lower standard of living. Jamaica must therefore not only exploit to the full her present advantages—the transport facilities by sea, rail and road, and the nearness of her fertile lands to deep water harbours—but must press on to achieve a wider measure of industry among her rural population and a better development of agricultural organisation and marketing. It is only by growing better crops, or by growing them more cheaply, that Jamaica will in the long run continue to hold her own against competing exporting countries. The small grower must learn to cultivate his bananas and not just watch them grow.

The *Right* Fertilizer

used at the *right* time.....

will pay Cash Dividends!

For the right Fertilizer for every crop; and for advice and help in solving your problems; write or call at—

BRYDEN & EVELYN, LTD.

"FERTILIZER HEADQUARTERS."

54, KING ST. - - - KINGSTON.

(b) Co-operation.

The development of the trade in Jamaica bananas and the competition for supplies made it increasingly difficult for small concerns trading in Jamaica and Central America with only limited capital to remain in the business. This ultimately resulted in their amalgamation into large units, the principal of which was the United Fruit Company which by 1919 had acquired a dominating position in the world's markets both as a producer, buyer and distributor of bananas. When the Association commenced operations in 1929 it is said that 40 per cent. of the bananas grown in Jamaica was not protected by contracts of sale. Many independent banana planters were thus handicapped in the increase of their production and the earnings of the small grower were dependent on the vagaries of the open market as regards price and rejections. This gave the opportunity for the co-operative movement to be of practical value, quite apart from its general educational and social value—an opportunity which it would have been difficult for any Government to neglect, more particularly in the encouragement it might give to the settlement of small holders on the land.

At about the same time a widespread stimulus was being given to colonial development by the Empire Marketing Board. Attention had been forcibly drawn at the West Indies Conference* to the subjection of the Jamaica Banana trade to large company interests, and low prices believed to be the results of this subjection in the past had never been forgotten. Co-operation was everywhere being urged as a remedy for depression amongst primary producers the world over, and a suitable and apparently fertile field for development was available in this industry. Representative planters and interests in Jamaica obtained the sympathy of the Governor, and promises of Government support were secured if a sufficient number of independent banana growers would participate in a co-operative society.

Thus after many discussions and careful explorations the Jamaica Banana Producers' Association emerged in 1929 and its establishment with its own controlled ships and marketing organisation has since been widely quoted in many official reports and publications as a further successful example of co-operation.

We are bound to ask how far the principles of co-operation have really been followed. The principles of co-operation may perhaps be briefly summarised as the promotion of thrift, self-help and mutual aid among agriculturists and other persons with common economic needs to bring about better living, better business and better methods of production, and combination for marketing.

Co-operation is a union of persons and not of capital: an association with economic aims formed by and freely open to persons having needs in common who have an equal voice in its management, usually made approximately equal contributions to its capital and business and derive proportional services and benefits. This character is preserved by specific provisions or by the formulation of model rules having the force of law.

In its commercial operations the co-operative principle of returning to its members the whole of the net proceeds of sales has of course been observed, but we cannot subscribe to the view that the Association had adequately fulfilled other and equally important principles, although it is clear, from records of prior discussions with the Plunket Foundation

*Report of the West Indies Conference 1926—p. 52/54.

and others, that the structure was suitably framed. Thus the importance of the movement having a wide base was stressed as early as 1927 as was the principle that one of the main objects of a co-operative movement must be to convert the small and weak seller into the big and strong seller by careful local organisation and contact.

According to its own Articles it was to be based on a central body operating in Kingston, with District Associations, each acting within their specified districts to advance the objects of the Association and particularly:

(a) To provide information to headquarters;
(b) To endeavour to increase membership;
(c) To see to the loyal performance of contracts;
(d) To report all cases of breach of contract and assist in recovering penalties therefor;
(e) To appoint a delegate to attend general meetings;
(f) To hold meetings from time to time for discussion and for making recommendations to headquarters.
(g) To appoint a delegate to confer with headquarters on any matter affecting their district.
(h) To encourage better cultivation;
(i) To promote improvement in quality and in grading, packing and handling fruit.

These District Associations, in our view, should have formed the very foundations of the movement. We can sympathise with the serious difficulties that hampered their development, but the fact remains that

RELIABLE
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Recognised and approved by planters the Empire over.

SULPHATE OF AMMONIA
SULPHATE OF POTASH
NICIFOS 18% N 18% P_2O_5
I.C.I. GARDEN FERTILIZER
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Prices on request:

T. GEDDES GRANT, Ltd. - - AGENTS - - 141 Harbour Street.

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I.C.I. LAWN FERTILIZER.

Prices on request:

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little was done, and the opportunity of the Association fulfilling useful social and educational functions has bee n largely lost.

Next, it is important to note that little attempt was made to reduce intermediate profits between production and sale, and the agency structure which had previously operated remained unchanged.

Then again, the Association was in fact the continuation of a commercial profit-sharing company, and the recognition of this is shown by the very considerable sums that are being paid annually for what in effect is the purchase of the goodwill of the Jamaica Fruit and Shipping Company. This purchase may have been a good commercial arrangement, and we think it was, since it is doubtful the Association could have achieved much without this company's business and personnel, but we are not at the moment regarding it from this aspect.

The Association states in their own evidence before us:—

> "The controversies that have arisen in regard to the effect of the establishment of the Association and its value to the Island as a whole cannot be evaluated without an appreciation of the fact that the position that existed in the banana industry in the years 1919 to 1929 (when the Association started operating) was determined by the existence of the Jamaica Fruit and Shipping Company, Ltd. and the DiGiorgio Fruit Corporation as real competitors of the United Fruit Company in the business."

Let us therefore consider what the position was in those ten years prior to the formation of the Association.

In 1919 the United Fruit Company had the Jamaica banana trade very largely in its own hands or under its control. The War was barely over and shipping was almost unobtainable. Outside competition therefore, had been non-existent and prices had been low.

In that year the Jamaica Fruit and Shipping Company, followed by the DiGiorgio Fruit Corporation acting in conjunction with it, introduced a competitive element into the market and prices immediately rose steeply. By about 1925, however, the position was less favourable and prices fell back from about 4/- to 2/6. The struggle was keen, and the new entrants, desiring to secure regularity of supplies without undue financial risks, made contracts with a number of large growers on the basis of a minimum price of 2/- plus a deferred payment of 50 per cent of the nett profits realised in the United States where the fruit was exclusively marketed. Supplies were thus assured without the financial commitments involved by a fixed contract price for a year or term of years, a risk that even the United Fruit Company, in their stronger financial position had only taken to a limited extent. The larger independent growers at that time were clearly glad to support the new venture and to take their chance of a profit-sharing risk. They welcomed the new company as providing a spear-head of competition with the United Fruit Company.

On the other hand, the United Fruit Company claims that competition was not new; except for the post-war period it had always been present. There can be little doubt, however, that the Jamaica Fruit and Shipping Company crystallised and stabilised this competition.

Had the Jamaica Fruit and Shipping Company been able to expand on a new basis of capitalisation by encouraging investment in it by the independent planters, and by linking to it the large number of small growers of bananas by the distribution of benefits in proportion to the business contributed, it is probable that the Association would not have been formed, for the alleged monopoly in the Island had been broken and prices had risen to a satisfactory level (in some years a high level).

The Jamaica Fruit and Shipping Company had also been able to trade at a profit whilst paying to growers prices similar to those paid by the Atlantic and United Fruit Companies.

Apart from the considerations already outlined, and the fact that large scale co-operative marketing of fruit had been successfully developed in exporting countries, particularly the United States of America, it must have been apparent to the management of the Jamaica Fruit and Shipping Company that it could not expand to a degree sufficient to be considered a very adequate rival to the vast American organisation without Government support. Thus a general movement began to develop in favour of the growers of Jamaica possessing their own organisation. The Association with the Government and the Empire Co-operative movement behind it, would present a stronger front than a small private company.

It is not without significance that very few witnesses in their evidence mentioned co-operation—few had any knowledge of its principles. But hardly a witness has failed to stress the value of the Association as a safeguard against the domination of foreign control of the Island's most important industry.

(To be Continued.)

THIS AND THAT.

The greater the temperature, the smaller the egg. Apparently, heat affects the hen's reproductive tract. Each component part of the egg is affected, the white more than the yolk or shell. Ample shade repays well.—*Professor H. M. Scott, Kansas Experiment Station.*

* * *

Field mice are so prolific that a single pair may be ancestors of a million within a year. The mice can breed at three weeks of age, and one captive field mouse produced 17 litters in a year. Damage to orchardists in New England alone from field mice is estimated at 500,000 dollars a year in severe winters. Important losses are also sustained by alfalfa and timothy growers.—*Dr. W. J. Hamilton, Jr., Cornell University.*

A Natural Plant Food.

WHAT IS IT?

CHILEAN NITRATE OF SODA

for soils which lack *nitrogen* and for plants which live by it.

Write or Telephone

GRACE KENNEDY & CO., LTD.,

Kingston.

RED PEAS.

The causes of the sudden rise in price of imported Chilean peas has been of general interest to the country.

An esteemed member of the Society, interesting himself in the matter, has been in correspondence with the British Consul-General of Chili and has been supplied with a translation of the Chilean Government decree governing the export of peas from Chili. We reproduce the decree below which quite adequately clears up the matter.

EDITOR.

Notice Published in the Chilean Press. Translation.

TO PRODUCERS AND SELLERS OF BEANS.

The Agricultural Export Board, with the intention of not disturbing the usual export business of beans and at the same time with a view to increasing the production of beans for internal consumption, will grant as from the present date permission to export beans from the next harvest up to a total of 10,000 tons, representing one-third of the total mean exports per annum during the last three years, under the following conditions.

1. Permits shall be granted
 (a) to individual producers or to groups of producers of the same locality;
 (b) to produce brokers or exports who present contracts with the producers of any given locality.

2. In regard to the permits, the variety of beans shall be classified in two groups:

 First Group: "Red Kidney," "Red Mexican," "Cristales" and "Pallares."

 Second Group: "Bayos," "Burros," "Araucanos," "Frutilla," "Coscorrones," "Arroz," "Triguitos" and other varieties not mentioned.

3. Persons interested in obtaining immediately permits for exporting beans must engage to sow beans of the second group over an area at least equal to that which is necessary in order to obtain the same quantity of beans which they desire to export.

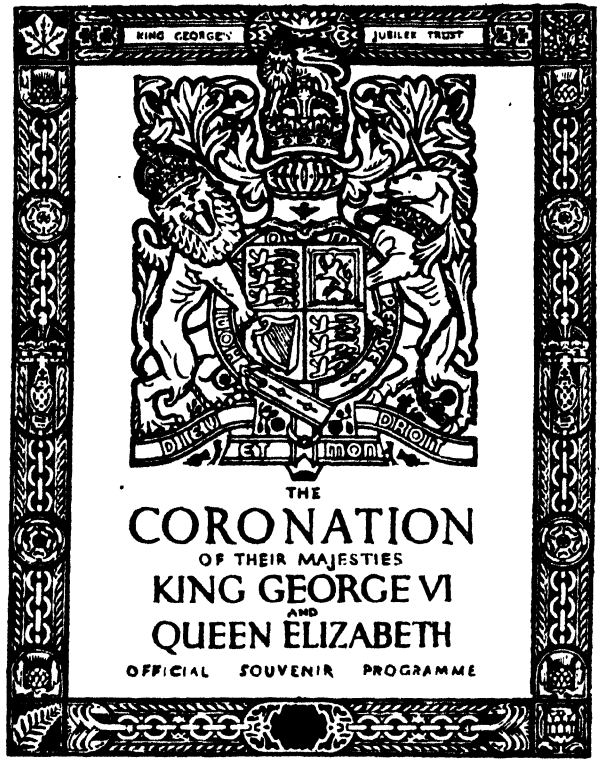
In reckoning up the area sown by each producer or group of producers there will be included both the sowings made directly by them and those made by tenants within those same properties.

4. In order to foment the production of beans for internal consumption and to secure a price for these producers, the Agricultural Export Board will work in the market by paying bounties in order to maintain the price of the following beans: "Burros," "Bayos," "Frutillas" and "Araucanos" in relation to those of other agricultural products.

5. The contracts referred to in the present agreement must contain, at least, the conditions which the Board determines as indispensable, and the signatures must be duly legalised by a suitable government officer.

6. Use may be made of the permits granted by the Agricultural Export Board as soon as it has been proved that the Producer or group of producers have complied satisfactorily with the engagements entered into in the contract.

(Sgd.) THE AGRICULTURAL EXPORT BOARD.



AN Edition of the Official Souvenir Programme of the Coronation has been produced for His Majesty's subjects overseas.

It consists of thirty-two pages of text and illustrations, and a cover bearing the Royal Coat-of-Arms printed in full colours and gold.

The contents include:

SPECIAL PHOTOGRAPHS
OF THEIR MAJESTIES
KING GEORGE VI
AND
QUEEN ELIZABETH

PHOTOGRAPHS OF
HER MAJESTY QUEEN MARY
THEIR ROYAL HIGHNESSES
THE PRINCESS ELIZABETH
THE PRINCESS MARGARET
AND OTHER MEMBERS OF THE ROYAL FAMILY

A CORONATION ODE
BY JOHN MASEFIELD, POET LAUREATE

THE KING'S MAJESTY
THE SIGNIFICANCE OF THE CORONATION TO THE EMPIRE BY JOHN DRINKWATER

DESCRIPTION OF THE
CORONATION PROCESSION
A PICTORIAL MAP OF THE ROUTE
OF THE PROCESSION
AN INTRODUCTION TO THE
SERVICE
BY HIS GRACE THE LORD ARCHBISHOP OF CANTERBURY
THE CORONATION SERVICE
IN WESTMINSTER ABBEY
AN EXPLANATION OF THE
CORONATION CEREMONIAL WITH
ILLUSTRATIONS
BY SIR GERALD WOLLASTON,
GARTER PRINCIPAL KING OF ARMS
A GENEALOGICAL TABLE
SHOWING THE DESCENT OF
THE CROWN.

The Official Information contained in this Souvenir Programme will enable those who will be listening to the Coronation broadcast from London to follow the historic ceremony word for word. The Programme will be treasured as a lasting record of His Majesty's Coronation. It will be on sale on Friday April 23rd. The public are advised to order their copies in advance from newsagents or booksellers.

PRICE—TWO SHILLINGS (In U.K.)

By Gracious Permission of His Majesty, this Programme is issued by King George's Jubilee Trust.

POULTRY NOTES.

Quoting from Dr. Salisbury's "Poultry Health News," he has this to say of Fowl Cholera:—

"The direct cause of fowl cholera, *Pasteurella avicidium*, is a very small void bacteria, microscopic in size, that stains more intensely at each end with the common dyes and grows on agar culture media with fine, clear dew-drop colonies and gives off a characteristic odour. The fowl cholera germ has the general characteristics of *hemmorhagic septicemia* organisms producing a similar disease in other animals . . . These organisms remain active for long periods of time in buildings and surface soil not exposed to air and light or subjected to disinfection."

As the symptoms precede convulsion and death by only a few hours, it will be realized that it is nearly impossible to treat this disease. Here, as in many other instances of the kind, prevention is really the proper method, and prevention really boils itself down to proper sanitation and removal of the predisposing causes to diseases of this kind. Among these predisposing causes, the most important are, worms, external parasites such as, lice, mites, ticks, fleas, and other lesser troubles which lower the resistance of the birds, such as colds, roup, chicken pox, bronchitis, etc.

We have another disease which sometimes to the inexperienced, is very difficult to distinguish from cholera, that is, Fowl Typhoid. This disease is not as rapid in its fatal effects, and much of what is said as to the importance of prevention in the case of Fowl Cholera is also applicable to Fowl Typhoid.

Fowl Typhoid.

Fowl typhoid is caused by *Salmonella gallanarium*, an organism closely related to the *Salmonella pullorum* responsible for pullorum disease.

The source of infection is through droppings of infected birds and contamination of feed and water. Affected birds have a green diarrhea and as the disease has a tendency to run a chronic course, the birds may become emaciated and anemic. Post mortem lesions are enlarged, olive green appearing liver, enlarged and congested spleen and kidneys.

The liver in turkeys is usually bronze to mahogany in colour and does not show the green cast, but is more swollen and congested with grey spots and specks throughout its structure.

There is usually a chronic inflammation of the heart and heart sac which may be grown fast to the heart and which may show greyish tumor-like growths extending deep into the muscle tissue.

The ovaries may show a diseased condition closely resembling pullorum disease. There may be little or no change noticeable in the intestinal tract of the chicken, but in turkeys there may be a grey flocculent material which is usually adhered to the mucous membrane resembling cankers or ulcers. This material is quite noticeable through the intestinal wall. The blood is very thin and watery and clots slowly, if at all.

(Dr. Salisbury's "Poultry Health News," December, 1936).

"Pioneer"

The Best Feed
For Every Need

Poultry:

From 1 to 6 or 7 Weeks old
PIONEER CHICK MASH
PIONEER CHICK SCRATCH

From 6 or 7 Weeks to 4½ or 5 Months
PIONEER GROWING MASH
PIONEER DEVELOPING SCRATCH

From 4½ or 5 Months on
For Egg Production
PIONEER LAYING MASH
PIONEER SENIOR SCRATCH

For Table Use Broilers and Capons
Feed same as above but use PIONEER BATTERY Chick Mash in place of Pioneer Chick Mash and PIONEER FATTENING MASH in place of Pioneer Growing Mash and Pioneer Laying Mash

Turkeys:

From 1 to 6 Weeks old
Pioneer TURKEY Starter
From 6 Weeks old on
Pioneer TURKEY Grower

Pigeons:

Pioneer PIGEON FOOD

Enquiries Solicited:

WHOLESALE FROM *Adolph Levy & Bro.*

(Extract from Tropical Agriculture, December, 1936.)

A ROLE OF POTASSIUM IN TOBACCO.

In a recent paper published in *Industrial and Engineering Chemistry*, Oct. 1936, 28, 10, pp. 1214-1223, Messrs F. R. Darkis, L. F. Dixon, F. A. Wolf and P. M. Gross, of Duke University, North Carolina, describe the results of their extensive investigations into the relationship between chemical composition of tobacco leaf and the position of the leaf on the stem, in its bearing on the quality-grading of flue-cured tobacco. For any given type, strain or variety of tobacco, it is well known that quality depends mainly on the kind of soil, the sorts of manures used, and the weather during the growing period. In these investigations, the Durham type of tobacco was selected for study; it was grown on a certain suitable soil-type, with the addition of properly balanced manurial mixtures. The harvested crops over a period of four years were flue-cured graded, and prepared for chemical analysis.

The following relationships were established:—

(1) Lowest nicotine content and highest potash content were found in the lowermost leaves and *vice versa* for the upper leaves.

(2) Nicotine content and degree of acidity (hydrogen-ion concentration) were positively correlated.

(3) The content of total acid was directly related to the contents of soluble ash and of total sugars.

(4) The content of total sugars was inversely correlated with amnio acid nitrogen.

(5) The greater the available supply of moisture to the plant during growth and maturation (wet years) the greater the assimilation of potash, and the smaller the amount of nicotine produced; conversely, the smaller the water supply (dry years), the smaller the amount of potash taken up into the leaves, and the greater the quantity of nicotine produced.

These striking relationships demonstrate that potassium exerts a dominating influence on the chemical reactions occurring within the tobacco plant. Apparently, available moisture regulates the assimilation of potash, whilst the plant's need to conserve moisture partly determines the utilisation of potash by the plant. *Under dry growing conditions*, the elaboration of carbohydrates is diminished by a deficiency of potash caused by lack of available water which decreases potash assimilation. Consequently, an increased amount of potash is utilised in the transportation of fatty substances that form protective coatings over the leaf surfaces. These two dry weather effects are accompanied by an increase in the amount of acids formed by the enhanced oxidation of carbo-hydrates, and by a lowering of pH value. Such conditions favour the formation of stable nicotine salts of organic acids, and therefore reduce the loss of nicotine by volatilisation. Furthermore, the greater development of protective fatty cuticle, as a result of dry weather, also restricts the loss of free nicotine. Both these effects operate to raise the nicotine content of tobacco leaf grown under dry conditions.

The above physiological explanation of the origin of the changes in nicotine content and its relationship to potash content also accounts for the variations found in the nicotine content of leaves occupying different positions on the stem of the tobacco plant.

F.H.

FERTILIZERS.

Sulphate of Ammonia	...	N. 20.6%		
Sulphate of Potash	...	K_2O. 48.7%		
Nitrate of Soda.				
Enpekay No. 1		N.12.4%	P_2O_5 12.4%	K_2O 14.9%
" " 2		10.3%	10.3%	20.7%
" " 4		10.2%	20.4%	10.0%
" " 5		8.0%	16.0%	16.0%
" " 6		7.0%	24.0%	10.0%
Nicifos No. 1		13.8%	41.4%	
" " 2		17.9%	17.9%	
" " 3		15.6%	31.2%	
Nitro Chalk		N.15.5%—Carbonate of Lime 48%		
Superphosphates.				
Urea		N.46.0%		

Anglo Guano Mixtures for Bananas and Canes.

THOMSON HANKEY & Co.,

8 Coronation Bldgs., Kingston.

Give Your Butter Sales

A Boost

by using Pound or Half-pound Cardboard Cartons, printed with your Dairys' name. - - - - - - - - - - - -

For samples and particulars write—

TRELAWNY AGENCIES, LTD.

Falmouth—Jamaica.

or see them at the Secretary's Office, J.A.S.

"SOPEX" Your Dog.

For a clean healthy skin
and a beautiful coat.

A Product of Cooper McDougall & Robertson, Ltd. of England.

T. GEDDES GRANT, Ltd. AGENTS, **141 Harbour St.**

(Extract from The Jamaica Gazette, Dec. 17, 1936.)

CATTLE SLAUGHTERED IN NOVEMBER, 1936.

Return showing the approximate number of Cattle slaughtered in the several parishes of the Island during November, 1936:—

Parish.	Number of Cattle Slaughtered.
Kingston	849
St. Andrew	115
St. Thomas	62
Portland	160
St. Mary	108
St. Ann	209
Trealwny	104
St. James	201
Hanover	126
Westmoreland	176
St. Elizabeth	140
Manchester	181
Clarendon	115
St. Catherine	188
Total	2,734

SAVE EVERY CALF

with

O.M. FRANKLIN BLACKLEG BACTERIN

at

Sixpence per dose.

At present prices the loss of even one calf is a serious blow to profits....
therefore

SAVE EVERY CALF

H. L. ARNETT -- -- Falmouth, Ja.

(Extract from "Crown Colonist," March, 1936).

A Neglected Colonial Asset.

It is strange that among the multitudinous commodities produced in the Crown Colonies, one potential source of wealth has been comparatively neglected, though found in abundance, and easy of cultivation. This is the manioc root, known also as Cassava, which is found, whether wild or cultivated, in many tropical countries, having also various uses apart from its edible value. The manioc (manihot utilissima) grows in the form of a shrub, with palm-like leaves, and bearing attractive flowers. In Brazil, the root or tuber forms the staple food of the Indians and other coloured workers, enabling them to undertake the heaviest physical labour, as for instance, carrying heavy bales of cotton.

The mode of initial preparation is to dry the tubers, then to grate and press them to extract the inherent poisons. Methods may be quite primitive in many instances, and better results could possibly be obtained by modern machinery, but in any case the process does not appear to be complicated. After being so treated, the roots themselves are shipped to British Ports, where there is a regular demand for thousands of tons per annum, with a steadily expanding market. Frequently, but not invariably, the tubers are sliced before despatch, as the great majority of buyers prefer them in this form.

In England, the raw material, as it may be styled, is purchased for various industrial uses to which a high carbohydrate content is a recommendation. Large quantities arrive also in the shape of meals, both coarse and fine, while a further percentage is shipped as "ampas," a by-product from the manufacture of farinaceous foods, and for the making of gumless adhesive paste the manioc root has unique properties. Incidentally, it provides the sticking medium for American Postage Stamps.

Another portion, again, is converted into Cassava Starch. This is employed not only in the manufacture of table delicacies for domestic consumption, but also for dressing the finest textiles, such as cotton print.

Thus it will be seen that a good market already exists in England; but it is far from having reached saturation point. Therefore, as the commodity is not difficult to cultivate, the Colonies should take greater advantage of the opportunities awaiting them. Financial results naturally depend very largely on market conditions. On the other hand, the material provides bulk cargo, often a distinct asset in itself.

AGRICULTURISTS!!!

We can supply you with **SULPHATE OF AMMONIA** in bags of 225 lbs. **EMULSO**—The better spray for Citrus Trees—**RODGERS' PRUNING** and **BUDDING KNIVES** and all other Agricultural Implements.

D. HENDERSON & CO., LTD.
KINGSTON.

SHORT CUTS.

Of many short cuts to your goal,
My son, beware!
For not through such a worthy soul
Can you prepare.

Foundations must be deep and strong,
And firmly laid;
And preparations wise and long
Must first be made.

An education man may gain,
Just bit by bit,
If through a course of years he'll train
To make him fit.

In search for knowledge, one may climb
The rugged steeps,
But only one step at a time,
And not by leaps.

The road to greatness winds around,
In service true;
To it no short cuts may be found
By me or you.

—JOHN E. SMITH, 150 West 13th St., N.Y.C.

Important to COFFEE GROWERS:

A "John Gordon" Coffee Pulper is an essential item of your farming equipment. These machines have been tried and tested over a period of years and have been found the most suitable for large and small holders.

Orders may be placed with the Secretary, Jamaica Agricultural Society for any of the following:

Gordon's "ESTRELLA" Pulper	**Price £10.**
Gordon's "MTOTO" Pulper	**Price £3 17s. 6d.**
"Bukoboa" Coffee Huller	**Price £3 17s. 6d.**

JOHN GORDON & CO.,

69 OLD BROAD STREET, LONDON, ENGLAND.

DIET.

COPY OF CIRCULAR SENT TO AGRICULTURAL INSTRUCTORS.

January 6, 1937.

To the Instructors:

Dear Sir,

As a result of representations from the Parochial Board of Manchester, the question of improving the diet of the peasantry (especially the non-adults), it has been decided that the matter should be seriously taken up by our Field Staff and mentioned in their lectures to Branches and elsewhere.

It seems to me that what is now eaten by the peasantry is not unwholesome, but rather that certain essential items of diet are absent from their daily menu and creates a nutriment and possibly a vitamin deficiency in their foods. I feel that an addition of fairly liberal supplies of fresh milk and green vegetables to the diet would make our people among the best fed anywhere; and as we are already engaged in the improvement of milch goats and dairy animals and also in encouraging vegetable production it should not be hard to correct the present peasantry diet just as soon as the importance of it can be brought home to them.

I should like you to make special endeavours from now on in the direction outlined in this Circular.

Yours faithfully,
(Sgd.) GLAISTER BAXTER,
Secretary.

(*Extract from "Crown Colonist" March*, 1936.)

BRITISH FINANCE IN PALESTINE.

The rural side of Palestine's credit needs had not escaped the attention of British capitalists. Besides what was being done by the British Banks, funds were being made available through such agencies as the Palestine Corporation, Central Bank of Co-operative Institutions in Palestine, and the new Agricultural Mortgage Company of Palestine. Short term crop loans had been granted in a large number of villages, and in many districts the power of the usurious money lender had been entirely broken.

Three of the four leading Banks in the Country were British. They were giving a large measure of assistance to the Orange Industry and Agriculture generally, and were also helping industries and supporting commerce and trade in keeping with the principles of English Banking.

When corresponding with Advertisers, mention the Journal of the

JAMAICA AGRICULTURAL SOCIETY.

(Extract from Supplement to "The Farmer and Stock-Breeder," August 17, 1936.

TO SALT STRING BEANS.

Allow 1 lb. salt to every 4 lb. prepared string beans. Leave beans whole if young, or slit lengthwise, or cut in 2-inch pieces if old. Blanch in the following way: Prepare salted soda water. Bring water, baking soda and salt to the boil in the proportions of 1 level teaspoon baking soda and 1¼ level teaspoons salt to 1 gallon of water. Throw in the beans. Leave for 3 minutes. Remove with a strainer. Dip quickly in cold water, then drain.

Place a layer of beans in the bottom of a jar or crock. Sprinkle with a little of the salt. Repeat layers till container is full. Leave till cool. Cover with another layer of salt, then weight. Stand overnight. In 24 hours enough brine should have formed to cover the beans. If not, add salted water, made by dissolving 1 lb. salt in 2 quarts water, and pour enough of this brine over the beans to cover them well. Cover with cheese cloth, then with a plate, and weight it down. Examine occasionally. If scum should rise, wash the cloth and re-cover When required for use, drain and soak overnight in fresh water and cook like fresh beans.

We don't make nearly enough use of green beans. They are not only delicious boiled and buttered, but they make an appetising vegetarian course and are useful in salad form.

PRODUCERS' COCOANUT MEAL
IS
GOLDEN BROWN IN COLOUR
Well toasted, giving good keeping qualities, Low in oil content, high in Proteins.
Price 6/- per 100lbs., (bags free) delivered at our Factory or Kingston Railway Station.
Jamaica Cocoanut Producers Association. Ltd,
Myers Wharf P.O., Kingston.

A most fascinating and refreshing Toilet Water
LIMACOL
made of limes and cologne water.
Beneficial for headaches, fevers, and general use in sick rooms.
Also used as an after-shave lotion and as a bath essence.
1/3 per bottle, 1/6 mentholated.
KINKEAD LIMITED. - - - - - KINGSTON.

BRANCH NOTES.

All Reports received are acknowledged in this section of the Journal. This month we have only been able to put in print Notes from Branches who have not yet had a publication this year.

Branch Secretaries should **write on one side of the paper only.**

[Ed.

ST. MARY : Baxter's Mtn.—Meeting 15.12.36. Some very important points about the Highgate Bananas were brought out by the Instructor, and those requiring plants gave in their names. The Instructor regretted no delegate was going to the Highgate meeting. The President was asked to convene a special meeting to discuss points re the Half-Yearly Meeting. The Instructor eulogised the Branch in keeping together in his absence and also in desiring to plant the Highgate Bananas. He gave hints about Banana Figs and advised the planting of China Bananas and Robusta. The Secretary on moving a vote of thanks also wished the Instructor a pleasant Xmas and New Year, to which the Instructor suitably replied. A new member was enrolled. Authorised Persons A. A. Strachan and H. Smellie reported O.K. and displayed equipment in order. The Instructor now left. The Roll Call showed 9 members, 1 visitor and the Instructor present. The meeting rose at the singing of the National Anthem.

R. J. LAWSON RICKETTS,
Annotto Bay P.O. Secretary.

Epsom.—Meeting Dec. 2. Ten members present including the President, two visitors and Instructor D. A. Jones, who attended during the earlier part of the day, and had a look at a few holdings, accompanied by the Secretary. A few matters arising from the minutes were dealt with. Messrs. Ed. Grossett and A. C. Gibson and the Secretary were elected delegates to the meeting of the St. Mary Branches Associated, and the President, Mr. W. G. Sampson, appointed as delegate to the Half-Yearly General Meeting. Four Authorized Persons submitted reports. Sub-Officer's lecture was postponed to next meeting. "Six Weeks" potato slips given to members by the Instructor who also lectured on Cocoa and Coffee. After dealing with a few minor matters the meeting was brought to a close with "God Save the King."

FRED A. EDWARDS,
Annotto Bay P.O. Secretary.

Free Hill.—Meeting held 26.11.36. Present : Messrs. J. W. Brown, 1st V.-P. presiding, Instructor L. A. M. B. Coke and eight other members. Prayer was offered by the Chairman who also expressed words of welcome to the Instructor who had recovered from a recent illness. The Instructor expressed thanks for the welcome. He spoke on the Barbados "Six Weeks" sweet potato, slips of which he had handed over to the Secretary for distribution among members. He also spoke on (a) Corn growing and (b) Goat rearing. The Instructor was thanked for his address. Discussions on (a) Irish Potatoes and (b) Effect of "disease oil" on land, and (c) Cassava cultivation, took place. Correspondence re Half-Yearly meeting of J.A.S. was deferred for next meeting. The Chairman expressed regret that the President, Mr. E. Z. Rose was still on the sick list, and expressed hopes of his early recovery. National Anthem brought the meeting to a close.

N. B. FALCONER,
Free Hill P.O. Secretary.

Flint River.—Meeting, 12th Nov. Present : Mr. H. G. Vassal, President, Mr. D. A. Jones, Instructor, 12 other members, a few of the Juveniles and one visitor. The Juveniles who carried through their meeting earlier, were addressed by the President and the Instructor gave them useful hints on Agriculture. They were also given seeds and plants to furnish their small holdings. The Juveniles showed very great interest in their work as evinced by their competition for 'garden eggs,' held a few weeks before when the First Prize was awarded by Mr. H. G. Vassal to Viola Crooks, whose Garden Egg weighed two pounds. Authorised Persons submitted their reports. The matter of Red Peas was dealt with. The estimate of an acre was taken, both for planting and reaping. The members asked the Instructor to be at the Demonstration plot on the next meeting day. The Instructor was asked to furnish suitable plants for the plot which members desired to make a model one. He promised to

help as much as he could. He gave them useful hints on the planting and sowing of seeds. He promised to visit a few holdings on his next visit. It was decided that a few delegates would be sent to the Half-Yearly general meeting. The meeting terminated with "The King."

(Miss) M. R. DAWKINS,
Troja P.O. Assistant Secretary.

Lucky Hill, Jeffrey Town.—Meeting 15.12.36. Present: Mr. T. A. Burke, 2nd V.-P. in the Chair, 8 other members and Instructor L. A. M. B. Coke. The Wet Sugar Industry was discussed at length, as also Catch Crops, and Vegetables. The Instructor gave some valuable hints on Canes and Potatoes. He was asked to procure some new variety of Canes from Mr. Harold Lindo, and the new variety of Potato slips. Mr. Donald Silvera was appointed delegate to the Half-Yearly Meeting in Kingston. Three Authorised Persons reported on their work. The Instructor informed the meeting that a gentleman from Retreat offered 10 acres of land for Cassava growing, and encouraged the members to plant. The Secretary stated that the Instructor visited the holdings of Messrs. Geohaghan, Burke, Duffus, Boyds, McCormac, and Rev. Young and demonstrated on Spraying of Citrus. One new member was elected. The Instructor spoke very nicely to the members and hoped to get over difficulties for the new year, and to have a more prosperous time, and wished the meeting a very happy Christmas. The Chairman reciprocated, and hoped that everything would work together for the good of the Society and the community. A Social was suggested for New Year's Day, and a committee was formed to look after the matter. Mr. Burke informed the meeting of a Bull for service. The National Anthem brought the meeting to a close.

F. WRIGHT GEOHAGHAN,
Lucky Hill P.O. Secretary.

Long Road.—Meeting, 16th Nov. President, Secretary and 15 members were present. Letters from Custos and M.L.C. of parish re Post Office at Long Road, were read. It was decided to send letter to Custos asking for appointment of Justice of Peace at Enfield. Resolutions re District Maternity Nurse, Ticket Distributor, Visit of D.M.O. for treatment of Yaws, were dealt with. Secretary was instructed to forward these to the St. Mary Branches Associated. Mr. S. Somers was nominated an Authorised Person. Mr. R. M. Hird was appointed delegate to the Half-Yearly Conference of the S.M.B.A. The Instructor gave a lecture on planting and care of Citrus, caring and curing of Cocoa and general management of cultivations. He was thanked. Other matters were dealt with and the meeting adjourned by the singing of the National Anthem.

R. M. HIRD,
Enfield P.O. Secretary.

Mt. Regale.—Meeting 4th Dec. Present: Mr. G. A. Hylton, President, 9 members and 2 visitors. Correspondence re General Half-Yearly Meeting, Red Peas, and Night Meetings were dealt with. The Sergeant of Police of the Richmond Constabulary Station instructed Authorised Persons and District Constables in their respective duties. He promised to be present at our next meeting. A hearty vote of thanks was extended to the Sergeant. The meeting was terminated by singing the National Anthem.

T. H. HANNAM,
Mt. Regale P.O. Secretary.

Richmond.—Meeting, 27th November, 1936. Present: Mr. D. A. Jones, Agricultural Instructor, Mr. Julius McIntosh, President, 8 other members and 4 visitors who subsequently became members. Mr. A. A. Allen spoke of the great benefits he is getting from the use of fertilizers. Mr. T. Davis and J. McIntosh endorsed the statement. The Instructor sprayed a number of cows and goats for ticks and lice before the meeting; he also spoke on the bad effects of the cutting of thin bananas. Sergeant Chambers of the Richmond Police Station lectured 5 Authorised Persons in attendance, on the proper execution of their duty. Singing of the National Anthem brought the meeting to a close.

S. A. OFFICER,
Richmond P.O. Secretary.

Craigmill.—Meeting held 1st Dec. Present: Messrs L. T. Lawrence, President, and 9 other members. Correspondence was read and discussed. Messrs. J. T. Lowe, Arthur Lowe, H. S. Burke, L. T. Lawrence and Miss Lucy Lowe, were elected to represent the Branch at the coming Conference of the P.B. Associated, and the Rev. T. Lawrence was elected to represent the Branch at the coming H.Y.G. Meeting of

the Society. The A. Persons present had nothing to report. It was decided that the Branch should have a Red Peas Competition in February. Rules were formed for the same, and Tuesday, 15th December was fixed for a special meeting to explain the matter to non-members. The marking of the Roll and the King terminated the meeting.

(Rev.) T. LAWRENCE,
Secretary.

Buff Bay P.O.

CLARENDON : Mount Airey.—Meeting 10th November. The President occupied the Chair. After the preliminaries were gone through, matters arising from the minutes were dealt with and arrangements were made for conveyance of delegates to the Half-Yearly Meeting to be held at Chapelton. Authorised Person R. Dawkins, reported "All Correct." Correspondence included letter from the Mocho Branch inviting the Mt. Airey Branch to its Annual Concert. Chief items for discussion were : "Highgate Banana," to which Mr. C. S. A. Edwards made interesting reference and was thanked by Mr. Rufus Dawkins. (b) Vegetable Culture : Mr. A. J. McLymont led off in the discussion. Other speakers on the subject were, Mr. C. S. A. Edwards, who, among other things, told how manure might be obtained to improve the growth of vegetable plants. Mr. Francis Eubank, Mr. Hubert Dawkins, Mr. C. Wilson, Mr. I. Beckford, Mr. R. Dawkins. The last speaker suggested that Major Moxsy's views be got on the subject. A new member was added to the Branch and was heartily welcomed by the President. There were present twenty-two members. The meeting terminated with the singing of the "King," after other minor matters were dealt with.

(Miss) M. E. A. DAWKINS,

Richmond Park.

WESTMORELAND · Cairn Curran.—Meeting 13th Nov. Present : Mr. E. W. Prout, President, Instructor Kelly, 12 members and 4 visitors. Water Supply discussed and deputation appointed to wait on Parochial Board. Instructor Kelly gave inspiring address on '—1. Banana · (a) harm done by cutting immature fruits; (b) cleaning fields, threshing trees, splitting and drying trunks, and setting traps to kill and control borers. 2. Cocoa : (a) planting and caring of trees; (b) gathering of fruits and curing of beans. Meeting terminated with the singing of the National Anthem.

Another meeting was held 11.12.36. Present : Mr. E W. Prout, President, 8 other members and Mr. F. W. Kelly, Instructor. Matters discussed were : Water Supply, Pea Industry, Election of Delegates, and formation of resolution for Yearly Meeting of Associated Branches. Meeting terminated with singing of the National Anthem.

(Miss) P. HEMMING,
Assistant Secretary.

Haddo.—Meeting Dec. 7th. Present : Mr. J. Alex. Stewart, President; Agricultural Instructor Mr F. W. Kelly, 25 members and 4 visitors. Two new members were enrolled. There was a discussion on Red Peas. It was decided that the Secretary write to the General Secretary of the J.A.S., explaining the members' decision on the matter. A resolution that tax be collected at McField instead of Sav.-la-Mar and Darliston, owing to the inconvenience which taxpayers suffer in travelling to these centres to pay their taxes, was drawn up, and the Secretary was directed to forward it to the Secretary of the Westmoreland Branches Associated to be dealt with at the next Annual Meeting, Dec. 19th. The Instructor then addressed meeting on Banana growing. He gave hints on the control of Borers which are so destructive to their crops. He also gave explanation on the origin and development of these insects. Reference to the Knutsford Park Show was made, and he encouraged members to try and attend in large numbers. Roll Call was taken and the meeting terminated by the singing of the National Anthem.

A.N. ROBERTS.

Ramble P.O.

Little London.—Meeting Nov. 16. Present were, Messrs. M. H. Segre, President, a good turnout of Officers, members and visitors, and the meeting was a lively one from beginning to end. Instructor Kelly was also present. Arising out of correspondence re Night Meeting, it was decided to change the hour of meeting from 7.30 to 6 p.m. on short days, and 6.30 on long days. The Instructor gave a short and instructive address on 'The Growing and Curing of Cocoa.' He pointed out that many people who grew Cocoa do not reap and cure it properly. He showed fully how this should be done. A resolution re the development of the agricultural resources of the Colony was unanimously passed. Miscellaneous matters were dealt with and delegates appointed for the meeting of the Associated Branches. The National Anthem brought a very interesting meeting to a close.

J. R. E. HALL,
Secretary.

Little London.

Petersfield.—Meeting 2nd Dec. Present: Mr. J. T. Turner (President), F. W. Kelly, Agricultural Instructor, 12 other members and 3 visitors. The Instructor gave a very helpful address re the cultivation and curing of Cocoa, for which he was thanked. He also encouraged members to attend the Agricultural Show to be held at Darliston on the 1st of Jan., 1937. Three Authorised Persons reported one arrest each. Five delegates were appointed to the meeting of Westmoreland Branches Associated on the 19th Dec. Other matters were dealt with and the meeting adjourned after the singing of the National Anthem.

J. T. McBEAN,
Petersfield P.O. Secretary.

Williamsfield.—Meeting 10th December, at which the President, Mr. C. E. Thompson presided. There were also present: Mr. F. W. Kelly, Instructor, who did demonstration work during the day at several Holdings, and several members. Resolutions for the Half-Yearly Meeting of the Westmoreland Branches Associated were drafted, and delegates were appointed. Instructor Kelly gave a warm and very inspiring lecture. Authorised Persons present gave their reports. A profitable meeting was brought to its close by the singing of the National Anthem.

S. M. BROOKES,
Glen Islay P.O. Secretary.

Porter's Mtn.—Meeting Dec. 14. Present: Mr. D. N. Clarke, President, 13 other members and 11 visitors. After the minutes were read and confirmed, a petition re Roads, was signed by fully thirty taxpayers. Mr. Charles Chambers was asked to take the petition around and have it signed by others. A public meeting was fixed for the last Thursday in February, to which many prominent gentlemen are to be invited. Letter from Secretary of Westmoreland Branches Associated re Annual Meeting was read and the following delegates were appointed. Messrs. D. F. Bowen, L. D. Barracks and L. M. Watson. A resolution re the Road, was framed. From an enquiry by Mr. Chas. Chambers as to whether the Parent Society would buy Seed Corn from this Branch, the Secretary was instructed to write and make the necessary enquiry. It was decided that a Corn Competition be held at the March meeting, the following being the chief points: (a) that 6 ears of corn be exhibited; (b) that an entrance fee of 3d. be charged; (c) that the competition be not only confined to members but also to outsiders; (d) that corn exhibited should be those grown by competitors. The Secretary was instructed to write to some of the most liberal gentlemen, asking for donations as a prize to aid in this. After minor matters were dealt with the meeting closed with singing of the National Anthem.

D. F. BOWEN,
Ramble P.O. Secretary.

MANCHESTER: Mile Gully.—Meeting held 27.11.36 with the President in the Chair. A member was enrolled. W. J. Nairne, Esq., was duly appointed to represent the Branch at the Half-Yearly General Meeting. There was an interesting general talk on matters affecting the Agricultural Branch Society, and also a discussion as to ways and means of getting Planters and Agriculturists to join the Branch Society. It was discussed whether some by-products, such as Guava, could not be grown and marketed abroad when during the winter months the Banana market is glutted. No denite decision was arrived at. Minor matters were dealt with, the roll marked when 10 members responded, and the meeting adjourned in the usual way.

T. A. MORRIS,
Mile Gully P.O. Secretary.

ST. JAMES: Orange.—Meeting 12th Nov. The President occupied the Chair. There were present, 17 members, the Instructor, and a few visitors, including school children. As arising from the minutes, Mr. Luther Clarke was nominated as an Authorised Person. Discussion on the outing to Grove Place was put off for next meeting. Correspondence re Night Meetings was dealt with. The meeting agreed that meetings should begin precisely at 7 p.m. and last till 9.30, and under special circumstances not later than 10. Cultivation of Red Peas was also dealt with. The answers to the questionnaire were given after careful consideration. Five members gave in orders for a supply of red peas. The Instructor spoke on the small stock industry. He showed how it could be developed. He dealt with the care of these animals. Questions were asked, and satisfactory answers given. Under New Business the question of an animal suitable for the district, was brought up by the Secretary. The meeting was in favour of a ram to improve the meat strain. After some discussion the Secretary was instructed to write to the General Secretary for information. The National Anthem brought the meeting to a close.

E. S. ANGLIN,
Adelphi P.O. Secretary.

ST. ELIZABETH : Springfield.—Meeting held 4th Dec., 1936. There were 19 members present. It was found that seeds sown for the Demonstration Plot had not grown, and this was the general complaint at the meeting. Authorised Persons present had no report to make. Report of Juvenile Branch was given. Delegates gave very concise report of Half-Yearly Meeting, and there was a long and healthy discussion of the Report. Members decided to folow instructions given and Mr. T. Coke was appointed to sow the Tobacco seeds according to instructions, and the Tomato seeds were distributed among members to be sown, also as per instructions. Male members arranged to turn out on the 15th Dec. to clear up plot. An interesting meeting ended with the National Anthem.

(Miss) R. E. WITTER,
Springfield P.O. Acting Secretary.

ST. ANN : Sturge Town.—Meeting 27th Nov. Present : Mr. A. E. Palmer, Vice-President, in the Chair, and thirteen other members. The delegates who attended the meeting of the St. Ann Branches Associated gave their report, which was received with the thanks of the Branch. There was but one new item of business for the day : that of the Parochial Board allowing water from the road to pass through the fields or homes of members without their knowledge or consent, thus destroying their holdings. A resolution was passed to be sent to the members of the Parochial Board, pointing out the above, and asking for immediate steps to rectify same. The Treasurer submitted the monthly financial report which was considered satisfactory. Two Authorised Persons reported "All Correct." Matters re Authorised Persons were dealt with and the meeting was brought to a close by the singing of the National Anthem.

L. A. S. DAWES,
Sturge Town P.O. Secretary.

JUVENILE BRANCHES.

WESTMORELAND : Porter's Mtn. Juvenile.—Meeting held 27th Nov., 1936. The Chair was occupied by Miss Gilda Ruddock, the First Vice-President. Present : Mr. D. F. Bowen, Headmaster of the School, over 40 members and a few visitors. After welcoming all present, the President called on the Secretary to read the minutes of the last meeting. As arising from the minutes, it was decided that the gardens of three of the members should be visited after the meeting. A recitation was given by Miss Betty Reid, for which a hearty vote of thanks was given her. "Hot Night" or "Impromptu Speeches" were carried through. This item proved very interesting. Teacher Bowen, who was directing the meeting, gave a very inspiring address. He was greatly thanked. Minor matters were discussed and the National Anthem terminated the meeting.

ST. CATHERINE : Bowerswood.—Meeting held Dec. 12. Present : the President, who occupied the Chair, 12 members and 3 visitors. The Instructor, Mr. C. S. Byles, and Agricultural Foreman Francis, were also in attendance. Among the important things dealt with were the Cassava and Red Peas industries, which were fully discussed. The Secretary was asked to submit the data obtained in regard to Red Peas, to the Board of Management. The Report of the Half-Yearly Meeting of the St. Catherine Branches Associated was read and adopted and the delegate was thanked. The subject of Parochial Road No. 26A was fully discussed. Instructor lectured on the use and application of Artificial and Organic Manures. A vote of thanks was given him. Minor matters were dealt with and the singing of the National Anthem brought a successful meeting to a close.

PETER E. J. DAVIS,
Bog Walk P.O. Secretary.

Victoria.—Meeting 19th Nov., 1936 with Rev. J. M. Walters presiding. The meeting learnt that a petition had been sent to the Parochial Board concerning the Wakefield Road. Resulting from correspondence dealt with, Mr. C. C. Walters was appointed delegate for the Half-Yearly General Meeting, and replies were decided on re Questions asked in circular about Red Peas production. Mr. T. McLeod, Authorised Person, and Mr. Syl. Thompson, of the Working Committee, gave their Reports. Instructor Byles in his address made special reference to (1) Varieties of Sweet Potato; (2) Pruning of Coffee in the fall; (3) Improving the quality of live stock; (4) Rearing of rabbits for manure production and for food. He received the thanks of the House. Mr. Thos. Sewell was congratulated for the quality of work done on his holding. The roll call was taken, the visitors thanked for their presence, and the meeting terminated with the singing of the National Anthem.

MARY L. BURRELL,
Linstead. Secretary.

Princessfield.—Meeting, 30th Nov. There were present, Mr. J. A. Peterson, in the Chair; Instructor C. S. Byles, and his Assistant, some members and a few visitors. The "Ganga" evil was fully discussed and it was decided that a resolution be sent to the Member of the parish regarding same. Mr. P. G. C. Graham was appointed delegate to the Half-Yearly Meeting. Authorised Persons reported cases of praedial larceny. The roll was called. The Instructor gave a very instructive address on Sweet Potatoes and Red Peas. He was thanked. The singing of the National Anthem brought the meeting to a close.

P. GRAHAM,
Secretary.

Bog Walk P.O.

PORTLAND : Breastworks.—Meeting 13th November. Present : Mr. J. C. Wilson, President, Mr. G. R. Graham, Instructor, 13 other members and 4 visitors. Owing to very inclement weather since the 11th Sept., no meeting was convened. Mr. W. B. Wilson opened on Trustees, of which body he is one. The Instructor ably cleared up the misunderstanding as he thought, after which the following were elected, viz. : Geo. Wilson, Treas., T. B. Downer, W. B. Wilson, T. E. Bucknor. With regard to a prize offered by Mr. L. A. Scott, Solicitor, of 10/6 for the best Yard or Compound in a specified radius, at a previous meeting it was decided that *bona fide* owners should compete, but owing to the fact that Titchfield Trust Land being the majority in the area expressed, the words '*bona fide* owners' were struck out and '*bona fide* members' were to be competitors, and that the inspection should be after three months from 1st Dec., i.e., 1st March, 1937. Hints were thrown out regarding an Agricultural Show in April, 1938, regarding which a Committee of 7 were selected. An amount was voted for the purchase of a lamp. Letters from the parent Body and the Portland Branches Associated were read and dealt with. The Instructor gave expressions of great interest to those present. This scanty meeting of but 17 out of 68 was due to threatened inclemency of the weather. The meeting was brought to a close with the Doxology.

L. F. ERGAS,
Assistant Secretary.

Port Antonio P.O.

ST. MARY : Flint River (Juvenile).—This Branch reported a meeting held 10.10.36, when the members reported on Garden Eggs, Rabbits, and their plots in general.

EDITOR....

OTHER REPORTS RECEIVED.

Branch and Secretary.	Date of Meeting.	Attendance.	Business.
Westmoreland:			
Kentucky (A. M. Scott)	4.12.36	13	Small Stock. Grindstone. Authorised Persons.
Lower Beeston Spring (W. Stewart)	10.12.36	18	Small Stock. Red peas. Gift of tomato seeds from Major Moxsy.
Porters Mtn. (D. F. Bowen)	16.11.36	..	Road. Authorised Persons. Red peas. Report of deputation to Parochial Board. Address by Instructor Hastings.
Manchester—			
Mizpah (U. C. Wolfe)	16.11.36	31	Small Stock. Market. Road. Red peas. Appointment of delegates of Parish Assocn. Meeting. Address by Mr. Cousins. Cultivation of Irish Potatoes. Distribution of agricultural literature.
Trelawny:			
Wilsons Run (L. E. Cowan)	8.12.36		Demonstration Plot. Address by Mr. W. A. Motto. Red peas.

When corresponding with Advertisers, mention the Journal of the

JAMAICA AGRICULTURAL SOCIETY.

OTHER REPORTS RECEIVED, *contd.*

Branch and Secretary.	Date of meeting.	Attendance.	Business.
Portland:			
Bangor Ridge (H. E. Reddick)	26.11.36	30	Red peas. Appointment of delegates at meeting of Parish Assocn. Resolutions. Agricultural headman. Road. Water Supply. Spray pump. Purchase of lamps. Authorised Persons.
Mahoe (J. O. Grant)	19.11.36 and	24	Cassava Industry. Demonstration Plot Appointment of delegates to meeting of P.B.A.
"	15.12.36	96	Report of meeting of P.B A. Authorised Persons. Election of delegate to Half-yearly General Meeting. Address by Mrs. J. O. Grant.
Central Portland (A. F. Spence)	28.11.36	15	Land Settlement. Water Supply. Side drains. Sea Wall. Road. Red peas industry. Authorised Persons. Address by Mr. U. V. Thompson, M.P.B.
St. Mary:			
Baxters Mtn. (R. J. L. Ricketts)	24.11.36	19	Red peas. Highgate Bananas. Road. Authorised Persons.
St. Catherine:			
Bellas Gate (A. A. McCurdy)	9.11.36	.	Road. Ticket Distributors. Appointment of delegates to meeting of Parish Assocn. Authorised Persons.
Bowerswood (P. E. J. Davis)	12.11.36	15	Appointment of delegate to meeting of Parish Assocn. Reports of Managing Committee and Authorised Persons. Address by Foreman Francis.
Springvale (D. U. Shakespeare)	21.12.36	26	Appointment of delegate to Half-yearly General meeting. Report of Parish Assocn. meeting. Peas industry. Authorised Persons. Roads.
St. James:			
Bickersteth (S. A. Barrett)	3.12.36	10	Journals. Election of Secretary. Authorised persons.
St. Elizabeth—			
Brighton (L. C. M. Wallace)	13.11.36	15	Red peas Industry. Election of President. Appointment of delegate to meeting of Parish Assocn.
Kilmarnock (J. A. Monteith)	10.11.36	14	Small Stock and subsidy. Authorised Persons.
Pepper (M. A. Atkinson)	16.12.36	8	Excursion to Grove Place. Half-yearly meeting at Nain. Road. Address by Instructor Lynch.
St. Andrew:			
Content Gap (F. A. Wilson)	21.11.36	over 34	Medical service. Corn mill. Country Fires Law. Show. Road.
Rock Hall (Mrs. B. Heslope)	23.11.36	..	Election of delegate to Half-yearly General Meeting. Payment of Taxes. Road. Water Supply. Authorised Persons.
Westphalia (S. T. Parkes)	30.11.36	10	Cane tops. Timber seedlings. Red peas. Show. Authorised Persons. Half-yearly meetings.
St. Thomas—			
Hagley Gap (J. B. Heywood)	27.11.36	..	Yaws. Buying of bananas. Sanitation.

Department of Science and Agriculture.

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Also to be had in 56 lb. Drum at	£2 2 0
N.B.—All orders for Carbon Bi-sulphide must include the cost of the iron drum for storing. When drum is returned in good condition, a refund of cost will be made.	
Iron drums for storing (to hold 5 lbs.)	3/6 each.
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THYMOL POWDERS, for worms and bots in horses and mules	4d. per pkt.
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Put up in strong Manilla envelopes holding one ounce each	9d. per 16 pkt.
N.B.—Orders for less than 16 packets not accepted. All applications must be accompanied by an agreement to retail the poison to the public at a price not exceeding one penny per packet, one penny per ounce or nine pence per lb.	
CYANOGAS. 1 lb. Tin "A" dust	1/10 per tin.
5 lb. Tin "A" dust	9/- per tin.
5 lb. Tin "G" fumigant	7/4 per tin
25 lb. Tin "A" dust	£1 9 2 per tin.
25 lb. Tin Citrus dust	£1 9 2 per tin.
*TESTING OUTFITS, COMPLETE, including cost of containers and mailing case	7/2 each
*STANDARD IODINE SOLUTION, in 9 oz. bottles (including cost of bottle, 6d., and mailing case 2/-)	3/- each.
*STARCH SOLUTION, in 6 oz. bottles (including cost of bottle 4d. and mailing case 8d.)	1/3 each.
*SODIUM BICARBONATE, in 6 oz. bottles (including cost of bottle 4d., and mailing case 8d.)	1/3 each.
*25 C.C. CYLINDERS (for dip testing)	2/2 each.
*MIXING BOTTLES (" " ")	4d. each.
FLY KILLER for the extermination of flies, mosquitoes, etc.	5/- per gal.
N.B.—Purchasers of Fly Killer must provide their own containers	

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THE JOURNAL

OF THE

Jamaica Agricultural Society.

The more people do the more they can do; he who does nothing renders himself incapable of doing anything; while we are executing one work we are preparing ourselves for undertaking another.

Vol. XLI. FEBRUARY & MARCH, 1937. Nos. 2 & 3.

BOARD OF MANAGEMENT.

The regular monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the Office of the Society, 11 North Parade, Kingston, on Wednesday, the 6th January, 1937, at 11.30 a m. There were present: Hon. Geo. Seymour Seymour, First Vice-President (Chairman); Rev W J. Thompson; Messrs. R. A. Burke, Sidney Barton, T. J. Cawley, C. O. Cover, T. P. V. McDaniel, U. Theo. McKay, W. Harper Watson; Messrs. P. St. L. Bacquie and A. P Hanson, Supervisors of Instructors, and the Secretary, Glaister Baxter.

Apologies for Absence.—

Apologies for absence were submitted from the Director of Agriculture and Major A. R. Moxsy.

Confirmation of Minutes of the Previous Meeting.—

Mr. McDaniel pointed out on page 8, under the heading Banana Disease, the words "wind blown" should read "wind borne."

With this correction the minutes were confirmed.

Matters arising out of previous Minutes.—

(a) *Statement by Secretary*: Statements by Secretary were submitted as follows:—

5th January, 1937.

GB. IL
To the Board of Management :
Gentlemen.

The First Vice-President authorised, after going carefully into the details of cost of the roadway, to proceed with the job which is now in hand.

It has developed that three small concrete steps will be necessary from this roadway to upper levels of the yard which the contractor has estimated to cost £6 12s. 6d., and which expenditure I invite the Board of Management to authorise.

Yours faithfully,
(Sgd.) GLAISTER BAXTER,
Secretary.

To the Board of Management :

Gentlemen,

A deputation of the Board of Management consisting of the First Vice-President, Hon. Geo. Seymour Seymour, O.B.E., the Second Vice-President, Rev. W. J. Thompson, and Mr. T. J. Cawley, attended at the Conference that His Excellency the Governor had at King's House on the 12th December. It was decided that a memorandum of the Conference should be prepared by Government for submission to this Board, and inviting their comments thereon.

I travelled extensively through the Island paying special attention to the leaf affection of Bananas, and am reporting specially on this matter.

Yours faithfully,

(Sgd.) GLAISTER BAXTER,
Secretary.

STATEMENT OF ACCOUNTS FOR DECEMBER, 1936.

Receipts.	Estimates.	Total.
	£ s d.	£ s. d
To Subscriptions	190 0 0	114 5 5
Affiliation and Journal Fees	190 0 0	164 7 1
Advertisements in the Journal	400 0 0	38 4 0
Miscellaneous	10 0 0	11 0 0
Beekeeping Industry Sales		2 11 4
Seeds Dept. Profits, 1936-37	400 0 0	
Government Grant	10,500 0 0	7,875 0 0
	£11,690 0 0	
Balance from 31st March, 1936		809 12 7
New Premises : Alterations		1,000 0 0
Agricultural Shows : Deposits		34 15 2
Beekeepers Organization		0 5 0
Seeds Trading Account		4,042 1 10
		14,092 2 5
Less Expenditure per contra		13,649 18 6
Balance		£442 3 11
Cash in hand	25 19 4	
Cash at Barclays Bank, Current Account ...	1 0 0	
Cash at Barclays Bank, Special Account	292 8 10	
Cash at Royal Bank of Canada Current Account ...	122 15 9	442 3 11



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Expenditure.	Estimates. £ s. d.	Total. £ s. d.
By Personal Emoluments—		
Secretary and Office Staff	2,142 0 0	1,725 2 5
Instructors and Supervisors	7,516 0 0	5,901 16 4
Instructors' Educational Courses and Attendance at Half-Yearly Meetings	125 0 0	73 11 7
Instructors' Tools and Contingencies	100 0 0	92 6 2
Secretary's and Office Travelling	100 0 0	95 2 0
Printing and Stationery	100 0 0	101 9 4
Printing and Issuing Journals and Reports ...	850 0 0	630 13 3
Rent and Rates	58 0 0	45 9 11
Postages and Telegrams	10 0 0	7 1 4
Rent of Telephones	27 0 0	19 8 8
Maintenance of Office Equipment	15 0 0	7 18 9
Incidentals	50 0 0	39 16 8
Auditor's Fees	25 0 0	25 0 0
Library Books	10 0 0	3 6 4
Show Equipment Repairs	15 0 0	3 19 9
Bombay Mango Plots, Citrus Budwood, Livestock Subsidies	150 0 0	86 5 9
New Office Equipment	40 0 0	27 18 5
Encouragement Juvenile Branches	10 0 0	2 2 0
Fertilizer Experiments	25 0 0	5 14 7
Cassava Trial Plots	30 0 0	33 14 0
White Yam Competitions	25 0 0	
Prize Holdings Competitions	150 0 0	
	£11,578 5 0	£8,927 17 3
Holdings Improvement Competition, St. Thomas ...		10 0 0
Beekeeping Industry		31 15 6
New Premises : Alterations and Additions ...		710 6 2
Travelling Advances		265 0 0
Plant Disease Control		0 9 6
Shows Account		22 6 6
Beekeepers' Organization		3 3 7
Seeds Trading Account		3,679 0 0
		£13,649 18 6

(Sgd.) GLAISTER BAXTER, Secretary and Treasurer.

(Sgd.) DONALD MACDONALD, Accountant.

Half-yearly General Meeting.

(a) *Minutes of last Meeting*: These were presented.

(b) *Secretary's Report*: It was decided that the First Vice-President should go through this Report with the Secretary.

(c) *Interim Agenda*: The Secretary was instructed to submit this to the First Vice-President for his approval when it was complete.

Communications.—

(a) *Letter from C.S.O. re assistance to Ex-B.W.I.R. Settlement at Coolshade*: The Secretary read the following letter:

14/35.

15th December, 1936.

"With reference to the correspondence ending with the letter from this office No. 14/35 of the 8th October, on the subject of assistance to the Ex-British West Indies Regiment Settlement at Coolshade, I would again stress that the Government is very anxious to make a success of this Settlement.

2. Considerable areas of land have been recently cleared but difficulty has been experienced by the settlers in obtaining the necessary seeds and plants. The Surveyor General reports that they appear to have made very good use of those plants and

seeds which were recently supplied to them. The Director of Agriculture is prepared to arrange to send plants of citrus and coffee and sugar cane tops as soon as the necessary preparations for planting are complete.

3. I would request the Board of Management of your Society to allocate a sum of say £5 0s. 0d. for the purchase of suitable seeds, etc., to be distributed among the settlers in time for the coming planting season. I should be grateful if the Agricultural Instructor concerned might pay an early visit to the Settlement, arranging to co-operate with the Surveyor General's Department in the distribution of seeds, and would also report when the necessary ground preparation and digging of holes is complete, in order that the Agricultural Department may send along the plants referred to above.

(Sgd.) F. L. BROWN,
for Colonial Secretary.

The Secretary said he had already instructed Instructor Byles accordingly.

Mr. Thompson said that with regard to the financial assistance, there were other ex-Soldier settlements that needed assistance, and he did not think it right to help one and not the others.

After some discussion Mr. McKay suggested that an Agricultural Foreman be appointed for the district and that the Secretary write the Government saying that the Society was willing to make every effort possible to assist and asking that a grant be made to enable them to help all settlements of the kind.

It was decided that the Secretary and Supervisor Hanson, accompanied by Messrs. Cawley and McDaniel should visit the district, and the sum of Five Pounds was allocated as requested by the Colonial Secretary.

(b) *Letter from A. McArthur re Subsidy to Cane Farmers*: The Secretary read the following letter:

14.12.36.

"Would you be so good as to take up the above question at your next meeting. I enclose copy of a letter recently sent by me to the "Gleaner" which speaks for itself.

Conditions apply to all Jamaica and while sugar growing and increase is a complicated one, it is obvious that our salvation lies in cane farming—but it must be subsidised to give farmers a minimum of 16/- per ton of cane.

Thanking you.

(Sgd.) A. MCARTHUR,

CANE PLANTING IN UPPER TRELAWNY.

The Editor:

SIR,—As we have had no storm damage to bananas (to which everything else has given place) there is a certain prosperity this year in this area. The result is to be seen in new cars and trucks and to a lesser extent improved houses. But what of the future!

From facts I give below it is obvious that cane has to come back, but with our distance, the best part of twenty miles, from the nearest sugar factory, cane cannot be grown in Upper Trelawny at 12/- per ton. Nothing under a guaranteed minimum price of 16/- per ton of cane at the factory would warrant cane farming in Upper Trelawny.

There is the cry for land settlement and the hope that "All Sides," 5,000 acres will be cut up when the present lease terminates. The settler with 1 to 5 acres cannot go in for citrus. He cannot wait for years for a return, and even if he could, our sturdy, hardworking settler is not of the type to grow citrus. I cannot imagine him fertilising, pruning, and spraying citrus trees and then gathering his fruit with gloves on.

Cane is something he understands, and it is always there as a food.

Briefly, the advantages of cane-growing—provided a profitable return, however small as compared with bananas, can be obtained—are:

1. Increase of our exports—much needed.
2. Cane could be planted on banana lands thrown up on account of Panama Disease. This is an area increased weekly in Jamaica.

3. Cane offers the best, one might almost say, the natural, rotation to bananas. While cane land is not necessarily banana land—land that will grow bananas will grow cane.

4. Cane growing on a section of cultivation as an alternating crop offers a certain form of insurance. Besides this, by rotating crops, grades and quality of fruit would improve. Rejections to-day make it clear that markets demand good fruit and that the day of selling thin and poor fruit is over.

5. On our hill lands the planting of cane would prevent erosion of soil.

6. Proper use of land, for example (a) land which would grow canes but is not suitable for bananas is at present often put into bananas; (b) land which settler recognises as unfit for bananas but would grow cane is often left in grass or desultorily cultivated in yams, cocoes, and a few canes, etc.

7. Help to cattle industry if more arable land used for growing an exportable product. If, following the line of least resistance, land abandoned on account of Panama Disease is to become pasture land, then the increase in number of cattle will put the cattle industry in a worse position.

Above facts are well known to the Jamaica Agricultural Society and to the Plant Disease Inspectors. The late Member for Trelawny recognised them and one of the dreams of his life was that the much rated Burnt Hill Road should be so graded that it could take a tram line to the factories of Lower Trelawny to facilitate the supplying of cane and firewood from Upper Trelawny.

My reference to citrus is no attempt at criticism of the Agricultural Department. The fact that Government help for citrus is only for those who put in groves of at least five acres is the proof that they recognise what I have stated. We, in Upper Trelawny would shew a lack of appreciation of the Agricultural Department did we not recognise the great benefit the Banana Industry of Upper Trelawny received in the appointment of Mr. Anderson as Plant Disease Inspector for this area.

I am, etc.,
(Sgd.) A. McARTHUR.

Stettin, Albert Town P.O
Dec. 7, 1936.

Mr. McKay moved that this be referred to a special committee to be known as the Cane Farming Committee, consisting of the three Vice-Presidents, Messrs. Burke and Cawley.

This was seconded by Mr. Thompson and carried.

Reports from Committees.—

The Report of the Bee Industry and Instructors' Committees were deferred to later in the day.

(c) *Special Committee re Pensions*: The Secretary presented Report as follows:

Kingston,
17th December, 1936.

To the Board of Management:
Gentlemen,

Your Special Committee appointed to consider the possibility of some scheme for pensions for the staff, and to specially consider the case of ex-Instructor Banks, met on Wednesday 16th December, 1936. Your Committee are of opinion that the case of ex-Assistant Instructor Buckley being the same as that of ex-Instructor Banks, that both should be considered.

Your Committee are of opinion that no sound financial pension fund to be of immediate benefit to employees could be created from our slender resources, due to the fact that we are dependent on Government for our subvention and the usual hazards of trade in connection with our Seed Department.

2. Your Committee recommends that steps be taken to give effect to resolution on the records of the Board Minutes of meeting held in June, 1936, moved by Mr. U. Theo. McKay, reading as follows:—

"That the Government be requested to grant pensions to the employees of the Jamaica Agricultural Society on the same basis as that on which pensions are paid to teachers, and that on the return of Sir Edward Denham, a small Committee of the Board wait on His Excellency and impress the justice of the granting of pensions to the employees of the Society."

3. That in view of long and satisfactory service, a gratuity of £50 be given to Mr. Banks and £25 to Mr. Buckley, ex-Instructors, who were retired on account of age at 31st March, 1934, and that the amounts be paid from our *surplus funds* at 31st

March, 1937, which surplus funds are the result of the operation of our Seed Department.

4. That the Secretary be instructed to prepare a statement for the use of any deputation waiting on the Government with regards to pensions for J.A.S. employees showing probable annual costs that would result from pensions to Officers during the ensuing ten years.

(Sgd.) GLAISTER BAXTER,
Secretary.

On the motion of Mr. Thompson, seconded by Mr. McKay, the Report was adopted.

(d) *Rat Destruction Campaign*: The Secretary submitted report of the Rat Destruction Campaign Committee and read letter from the Director of Agriculture on the subject.

After discussion Mr. McKay moved that the Report be recommitted, that Mr. Cover be added to the Committee and that every effort be made to get the Director of Agriculture to attend the next meeting.

This was agreed to.

Diseases of Plants and Animals: Insect Pests.—

(a) *Panama Disease of Bananas—Report for November*: The Secretary stated that this was not yet to hand.

(b) *Letter from C.S.O. covering Order re Gladiolus Thrips.*—The Secretary presented C.S.O. letter No. 829/36, dated 24th December, covering Order with reference to Gladiolus Thrips, which he said would be published in the Journal. The order was noted.

Office.—

(a) *Secretary's Report on Travelling for November* —The Secretary presented report on his travelling for the month of November. This was noted.

(b & c) *Applications from Miss Lewis and Miss Hilton for extended leave.*—Application from Miss Lewis for three months leave from April next and from Miss Hilton for three months from June next was submitted.

On the motion of Mr. Cawley, seconded by Mr Burke, the applications were granted on full pay.

Competitions.—

(a) *Communications from Claremont Branch, Instructors Atkinson and Robotham and Supervisor Bacquie re modification of Rules for White Yam Competition.*—The Secretary said they were suggesting that the closing date for entries be extended to February, 1937, also that the number of heads to a hill be left open as better yields were sometimes obtained planting one head to a hill.

It was decided that the matter should be referred to the Secretary and the Supervisors and that they should recast the rules on the lines suggested.

Resolutions from Branches.—

(a) *St. Catherine Branches Associated re Compulsory third party Insurance.*— The Secretary was instructed to advise the St. Catherine Branches Associated that the Board was unable to deal with such a matter.

(b) *Content Gap re Monthly Visit of D.M.O.*—The Secretary was instructed to forward this to the Superintending Medical Officer.

(c) *Rock River re reduction of cost of citrus plants.*—The Secretary was instructd to write the Branch saying that they would take no

action in this matter as they considered that the citrus plants were being sold at a cheap enough rate.

(d) *Waterloo (St. Catherine) re Road.*—It was decided to forward this to the Parochial Board for St. Catherine.

(e) *Yorke Valley re Tobacco Industry.*—This resolution asked for assistance in the development of the tobacco industry in the Cave River basin. It was decided to refer it to the Director of Agriculture.

(f) *Lucky Hill-Jeffrey Town.*—Re (i) Suppression of Praedial Larceny by flogging; (ii) Identification of Habitual Criminals by branding.

It was decided to write the Branch saying that the Board was not in sympathy with these resolutions.

(g) *Beeston Spring re* (i) *Roads;* (ii) *Sanitation.*—The Secretary was instructed to refer these to the proper authorities.

(h) *St. Elizabeth Branches Associated re* (1) *Tobacco Cultivation*: The Secretary was instructed to forward this to the Director of Agriculture.

(ii) *Protection of Red Peas*: The Secretary was instructed to advise the Branch that they had already recommended to the Government the protection of peas.

(iii) *Telephone Service at Fyffes Pen*: The Secretary was instructed to forward this to the Postmaster for Jamaica.

(iv) *Corn Industry*: This resolution asked for a storing centre to be erected in the parish. The Secretary was instructed to inform them of the firm in Kingston that did dehydrating and maintained a minimum price of 4/- per bushel in Kingston.

New Members.—

On the motion of Mr. Cawley, seconded by Mr. McKay, the following were elected to membership:

Mrs. Constance Trinder, Holton Cottage, Mandeville.
Messrs. Standard Fruit & Steamship Co., Kingston.
Sir Archibald Campbell, Kilcairn, Newmarket.
J. A. Miller, 175½ Old Hope Road, Liguanea.
F. C. Tomlinson, Black River.

Other Business.—

(a) *Resolution from Springvale Branch re Parochial Roads*: The Secretary was instructed to forward this to the Parochial Board for St. Catherine.

(b) *St. Mary Branches Associated re attendance of Teachers at the Half-Yearly Meeting*: This resolution asked that the Director of Education be approached through this Society with a request to grant leave to those teachers who had been appointed delegates from Branch Societies to the Half-Yearly Meeting.

The Secretary was instructed to write the Director of Education making the request.

(c) Westphalia Branch expressing condolence to sufferers in *Xmas Morning Tragedy*. The Secretary was instructed to forward this to the Kingston & St. Andrew Corporation.

(d) *Lucky Hill re Interest on Loans from Loan Banks*: The Secretary was directed to find out from the Agricultural Loan Societies Board just what the position was.

Rose Valley re (i) *Sale of Lumber on Crown Lands*: The Secretary was instructed to refer this to the Surveyor General.

(ii) *Assistant Instructor to Mr. M. N. Thompson*: The Secretary was instructed to advise the Branch that nothing could be done at the moment but that there was a new scheme now in operation and they hoped that under that scheme they would in the near future be able to afford them the necessary assistance.

(iii) *Road*: It was decided to forward this to the Parochial Board for St. Elizabeth.

(f) *Invitation from Trelawny Branches Associated to Secretary to attend meeting on 23rd January, 1937*: This was left to the Secretary's discretion.

(g) *Request from Mahoe Branch to exhibit Agricultural Products at the Half-Yearly Meeting*: The Secretary was directed to find out what they intended exhibiting, and if practicable, permission should be granted.

Report of Meeting of Instructors Committee: The Secretary presented report from the Instructors' Committee as follows:

6th January, 1937.

To the Board of Management:
Gentlemen,

Your Instructors' met this morning and beg to recommend as follows:

1. That Supervisor Bacquie be granted leave for the month of February, and in case there is the necessity that Supervisor Hanson, by direction of the Secretary, should be sent into the area and paid extra for travelling at the rate of 6d. per mile.
2. That two small experiments be carried through from the standpoint of soil treatment on lands that are suffering severe attacks of the banana leaf trouble.
3. That Instructor Lynch be supplied with spraying material for assisting tomato ventures in St. Elizabeth at a cost not exceeding £4.
4. That affiliation of the Paisley Branch, in St. Andrew, be granted.

We referred instructions regarding the leaf disease of bananas from the Director of Agriculture to the field staff for their information.

(Sgd) GLAISTER BAXTER,
Secretary.

Gentlemen,

Your Bee Industry Committee met this morning (Wednesday, January 6th) and begs to recommend as follows:

(1) That the plans for the removal of the model apiary decided on previously be immediately carried through.

(2) That the cost of maintaining the apiary amounting to £31 15s. 6d. for the period 1st April to 31st December, 1936, be applied for as a refund from the grant in aid to the Bee Industry. Also the cost of removal estimated at £30.

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(3) That the question of re-equipping the apiary as recommended by the Bee Instructor be placed in the hands of a sub-committee of the Bee Industry Committee, consisting of Mr. P. W. Sangster, Mr. T. J. Cawley, and Dr. Stephen Lockett, Government Veterinary Surgeon, with a view of arriving at what expenditure is necessary for such re-equipment and that the question of reducing the model apiary in case complete re-equipment is decided on, to 25 colonies for a start, be considered by the sub-committee."

(Sgd.) GLAISTER BAXTER,
Secretary of the Committee.

On the motion of Mr. McKay, seconded by Mr. Watson, this was adopted.

The meeting then adjourned to Wednesday, the 3rd February, 1937, at 11.30 a.m.

BOARD OF MANAGEMENT.

The regular monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the Office of the Society, 10-12 North Parade, Kingston, on Wednesday, the third day of February, 1937, at 11.30 a.m. There were present: Hon. George Seymour Seymour, O.B.E., 1st Vice-President, in the Chair, Rev. W. J. Thompson and Mr. U. Theo. McKay, Second and Third Vice-Presidents respectively, Hon. A. C. Barnes, Director of Agriculture (*ex officio*), Hons. E. A. McNeill and C. A. Reid, Messrs. T. J. Cawley, C. O. Cover, T. P. V. Daniel, D. D. Phillips and S. M. Walker, Major A. R. Moxsy; Messrs. P. St. L. Bacque and A. P. Hanson, Supervisors of Instructors and the Secretary, Glaister Baxter.

Shortly after the meeting began Mr. R. A. Burke, Hon. R. Ehrenstein, and Messrs. Sidney Barton and D. T. Wint attended.

Apologies for Absence.

Apology for absence was submitted on behalf of Mr. W. Harper Watson

Confirmation of Minutes of the Previous Meeting.

Copies of the minutes of the last meeting having been sent to the members of the Board, they were taken as read, and on the motion of Major Moxsy, seconded by Mr. McKay, they were confirmed.

Matters arising out of the Previous Minutes.

(a) *Statement by Secretary* was submitted as follows:—

Gentlemen,

I have prepared reports on several matters as listed lower down on the Agenda.

All other correspondence consequent on the deliberations of the Board at their last meeting have been carried through.

(Sgd.) GLAISTER BAXTER,
Secretary.

(b) *Secretary's Report on visit to areas affected by Banana Leaf Trouble.* The Secretary stated that he had forwarded copies of this Report to individual members of the Board.

The Report was received and the Secretary was directed to forward a copy to the Director of Agriculture. The Secretary stated that the Director of Agriculture already had a copy.

(c) *Memorandum re Conference of His Excellency the Governor with delegates from Board of Management.* The Secretary submitted the following letter and memorandum, copies of which he said had been issued to individual members of the Board.

Colonial Secretary's Office,
11th January, 1937.

2450/36.

Sir,

With reference to the correspondence ending with your letter No. 116 of the 4th December, 1936, I am directed to transmit herewith a copy of the Notes of the meeting held at King's House on Saturday, the 12th December, 1936, to discuss measures to secure closer co-ordination of agricultural field services, and to consider means of bringing about a better system of control over the work of Instructors of the Jamaica Agricultural Society.

2. I am to ask that you will be so good as to consult the Members of the Board of Management of your Society in time to permit of the matter being brought forward at the Half-Yearly Meeting on the 21st January, 1937.

3. I may say that His Excellency the Governor proposes to touch upon the subject in his address at the Half-Yearly Meeting.

(Sgd.) F. L. BROWN,
for Colonial Secretary.

NOTES OF A MEETING HELD AT KING'S HOUSE ON SATURDAY, 12TH DECEMBER, 1936.

A Conference was held at King's House on Saturday, December 12th to discuss measures to secure closer co-ordination of agricultural field services and to consider means of bringing about a better system of control over the work of Instructors of the Jamaica Agricultural Society.

2. There were present :

His Excellency the Governor.
The Hon. The Colonial Secretary.
The Director of Agriculture.
The Hon. G. Seymour Seymour, O.B.E., the Rev. W. J. Thompson, Mr. T. J. Cawley—representing the Jamaica Agricultural Society.
The Hon. R. Ehrenstein, the Hon. C. A. Reid—representing The Agricultural Development Board.
Mr. G. Baxter, Secretary, Jamaica Agricultural Society.

His Excellency the Governor outlined the objects for which the meeting had been called and said that it was necessary to consider a better organization of agricultural field services in order to secure an improved service with the funds now available. The needs of Agricultural Development, including Land Settlement, involved close attention to practical field instruction on right lines. It was not possible to provide any additional funds for this work, so that it was desirable for all agricultural interests and in particular the Department of Agriculture and the Jamaica Agricultural Society to get together and discuss the possibilities of making better use of the existing facilities and staff. There was no intention of lessening the scope and activities of the Agricultural Society. That Institution was capable of rendering good service to the community, particularly through its Seeds and Produce Department. He desired to see the Society develop but he could not say that he was entirely satisfied that the fullest use was made of the existing field service.

4. Discussion ensued and the views recorded below were expressed by various gentlemen present :

i. It was considered undesirable to place the Instructors of the Agricultural Society under the control of the Director of Agriculture, but it was agreed that the Board of Management of the Society and the Instructors' Committee were not well constituted to organise and control field instruction service.

ii. It was recognised that the work of the Instructors should be clearly co-ordinated with, and correlated to the Agricultural policy of the Government and the work of the Department of Science and Agriculture. The need for better training of Instructors was also mentioned and the possibility of further linking up inspection with instruction work. The old prejudice against Inspectors had largely disappeared, and if the Inspectors of the Department and the Instructors of the Society could be brought together for the performance of similar duties, it should be possible to reduce the size of the districts which had now to be covered by both, and to give more effective service.

iii. The need for more concentrated work was apparent and something should be done to enable Instructors to work upon definite projects in limited areas, to be approved on wider responsibility and more definite lines of work on a special job, as, for example, a Land Settlement Scheme. Mention was made of the different systems of payment to Inspectors and Instructors : the former were paid a salary and a definite amount for travelling, and the latter a sum which included salary and travelling expenses. It was considered that there would be no difficulty in

bringing both on the same basis. Inspectors of Plant Diseases, with two exceptions, were temporary Officers with no pension rights.

iv. It was felt that with the increase of Land Settlement Schemes efforts should be made to attach resident Agricultural Instructors to some of the bigger schemes, who would themselves work plots on the settlement and give special assistance and instruction to the other settlers.

v. Reference was made to the desirability of using the services of practical planters of high repute in an advisory capacity. The present method of election to the Board of Management of the Agricultural Society often resulted in men of that type failing to obtain seats upon the Board, and the possibility of co-opting additional members was touched upon.

vi. The meeting agreed as to the desirability of giving careful consideration to an improved method of control of field agricultural services and accepted as a basis for further discussion the suggestion of the Colonial Secretary that Inspectors and Instructors should be brought together in a service to be controlled by a small Board of three members, of whom one should be the Director of Agriculture.

vii. It was further suggested that the Board of Management of the Agricultural Society should put forward three names,—not necessarily members of the Board of Management, from whom the Governor should select one member for the proposed new Board, and that the third member should be appointed by the Governor from names put forward jointly by the Director of Agriculture and the member selected as above.

viii. It was suggested that a separate Branch of agricultural inspection and instruction might be formed with funds for its working provided in the Estimates which should include the financial provision and staff now made in the Estimates of the Department of Science and Agriculture and of the Jamaica Agricultural Society.

ix. It was agreed that a memorandum of the meeting should be prepared and circulated in order to give an opportunity to the Agricultural Society further to consider the matter and to discuss it at their Half-Yearly Meeting to be held in January.

Speaking on the subject, the Director of Agriculture said he wished to remove at the outset any impression that either the Government or any particular Officer of Government such as the Director of Agriculture had any desire whatever to destroy or undermine in the slightest degree the Jamaica Agricultural Society. The Agriculture of Jamaica had for some time reached a stage where the careful review of the various services connected with it was necessary, when as it were the situation should be surveyed and plans made to deal with the immediate needs which could be foreseen in the near future. The Department of Agriculture was not established as long as the Jamaica Agricultural Society, but the Department arose from predecessors that dated back to 1773 he thought. Their records went back to the Botanic Gardens in Kingston and St. Thomas. In order to meet changing circumstances the Government found it necessary to make alterations in the agricultural services under their direct control, and as a result there had been a change from Botanic Gardens to a Department of Gardens and Plantations and later a further change to the Department of Science and Agriculture. He mentioned that, he said, to show that new circumstances and changed conditions had to be met, and suggested that the change in the agricultural conditions in Jamaica resulting more particularly from the development of land settlement, and of new crops, and numerous other things had brought them to a stage where a review of the whole situation was necesary with the object of ascertaining what best could be done to meet the various needs. His relations with the Society had been very cordial since he arrived in Jamaica over three years ago. The Society had honoured him by asking him to serve on several committees and welcomed his suggestion that a Planning Committee should be appointed to advise on the work of Instructors. The recommendations of that Committe had been put into effect, he believed, with advantage to the Society and the people. During the past few years there had been a great agricultural awakening in the

Island, and it was amazing the response that had been made to proposals for agricultural development or rather to agricultural extension and expansion, chief of which he mentioned citrus, minor fruits and vegetables, tobacco and potatoes. That, he said, was sufficient to indicate the necessity for careful and quiet examination of the whole situation with the object of determining what best could be done to meet the agricultural needs of the Island. He wanted it to be clearly understood that he had no desire to take on more work, and his staff and himself were fully occupied, but such a position did not relieve anyone from the responsibility of endeavouring to meet as far as they could what they believed to be and what was represented to them as being the agricultural situation in the Island. There were nine or ten Officers of the Department who were carrying out work of agricultural Instructors in order that the Department should proceed with development programmes which had been decided upon. This had been brought about by internal reorganization. The object of the Governor in bringing the matter under consideration before the Society in the manner he did was to endeavour to impress realization of the need for a study of the whole situation in order that the Society and the Department, both of which were financed by Government, could place themselves in a position to meet these needs. He could not believe that the wide subject of the agricultural services of the Island was contentious. He believed that they were all prepared to endeavour to arrive at some harmonious basis on which the agricultural services of the Island could progress, but they should not close their eyes to the weaknesses and deficiencies of the existing system and service. There must be some way in which the Society, established for over 40 years during which time it had received substantial grants from Government, could join with the Department of Agriculture, without either body losing its identity, in order to bring about the object aimed at. It had been suggested that the Director of Agriculture wanted to take away the Instructors. He did not want to do anything of the kind, but he felt it his duty to make recommendations wtih regard to the general agricultural services of the Island and endeavour to bring about the best service for the money available. He felt that the Board would not disagree with him in that direction. The memorandum before the Board was submitted purely as a basis for discussion. No decision had been arrived at. His Excellency in his speech at the Half-Yearly Meeting submitted that no change would be made until the Board of Management had had the fullest opportunity of discussing the matter. This, he thought, was an indication that there was no desire to make a sudden change and that it was only desired that all those interested in the agricultural services should get together and devise a new system to meet the new situation and so ensure progress.

Mr. McKay said the Director's speech was made in defence without being attacked. During the regime of Sir Edward Stubbs there had been a great deal of discussion about the Agricultural Society, and a Committee then appointed with the Hon. Collector General at its head, as far as he remembered, reported adversely so far as the Society was concerned, and were that report acted upon the Society would have already been absorbed by the Department of Agriculture. But Sir Edward Stubbs in his wisdom, after serious and careful consideration, declined to act on the recommendations of that Committee. The Director of Agriculture had submitted that there was no intention to destroy the Society, but although the intention might not be there, the result of the recommendations, if accepted, would be the destruction of

the Society. The Instructors were the vital members of the Parent Body, and with those taken away the Society would assuredly be badly crippled. The recommendation was that the Instructors should be put under a Committee of three. If that Committee failed, the natural sequence would be that the control would be transferred to the Department of Agriculture. The adoption of such a recommendation would therefore not be satisfactory. Scattered all over the Island were members of the Jamaica Agricultural Society and members of the Board of Management who took especial interest in the work of the Agricultural Instructors and in agriculture in general throughout the Island. Sometimes criticisms had to be made and it was likely that to certain people the Agricultural Society was an inconvenience, and this was perhaps an attempt to remove such an inconvenience. In attempting to substitute a Committee of three for a Board elected by the people throughout the entire Island and giving voluntary service for a number of years seemed to be an effort to kill the best interests of agriculture in the Island and also an attempt to destroy representative government. All the Society needed was funds. Their grant from the Government was less than £10,000 per annum. The Department of Agriculture had the funds they needed at their disposal and he thought they should demonstrate their efficiency in service to the Island for such sums. He commended the Department for their success in the increase of the milk production of the Island, and in their efforts regarding the Citrus Industry and the propagation of mosaic disease resistant varieties of canes. But on the obverse side he said the disastrous effects of the incidence of Panama Disease, Mosaic Disease, the Banana Borer, and latterly the serious leaf disease of bananas were in each instance at the onset overlooked by the Department. The Board might not have vast powers but they had considerable interest. The proposal was to combine Plant Disease Inspectors with Agricultural Instructors. The former were Officers of the Law, the latter were missionaries. The union of these two would be an unholy marriage, useless to the interests of Jamaica. Why should the proposal be made since the Society had committed no offence? The Director had stated that the intention was not to destroy the Society, nevertheless the result would be the wiping out of the Society. The Board had been endeavouring to find the weak spots in the service. They had been gradually introducing some new scheme that would improve such service. From experience and observation he had been convinced that the Branch Societies could not exist without the Instructors although he had not always been of that opinion. Those Branch Societies were the medium through which the people expressed themselves and were an asset to the Colony, as they enhanced contentment and a feeling of being not neglected. The Government should be willing to continue the annual subsidy to the Society if they did nothing else but kept the Branches alive. The revival in agriculture to which the Director of Agriculture had alluded, had been brought about by the Society, and the attempt to take away the Instructors from the Society amounted to stating that the Society was not capable of carrying on its work. He quoted Lord Olivier as follows:—

"This problem of development Blake attacked on two principal lines: the construction of roads and the diffusion of agricultural knowledge first by sending officers of the Government Botanic Department to show the settlers how to improve their cocoa and other staple crops, but principally by the foundation and organisation of the Jamaica Agricultural Society. That Society has proved itself incalculably valuable as

an agency of development, the maintenance of whose efficiency ought to be held in constant regard by the Island Government."

Sir Henry Blake he said, as was well known was a former Governor of Jamaica and the founder of the Society. He appealed to his colleagues to vote against the proposal. They intended to fight against this scheme, and if they were to go down, let them go down with flags flying. They should not resile a single bit in their attitude against this proposal, but let them give blow for blow, and if they were to go down, they would be able to say that they had been crushed, not by right, but by might.

Mr. Burke pointed out that there were many bodies advising the Government in matters agricultural. The Agricultural Society, the Produce Advisory Board, the Banana and Citrus Advisory Board, the Agricultural Development Board and the Citrus Control Board, of which latter they had two bodies. These bodies were all nominated by the Governor with the exception of the first named, the Agricultural Society only two members of which were *ex-officio* members. It was very undesirable that the Society should be merged into the Department of Agriculture. It seemed to him big issues were at stake and it was remarkable that the memorandum with these proposals was submitted just after the incidence of the banana leaf disease which had been brought into publicity. He felt that the public was not at the moment very satisfied about many things. Although he was not a member of the Jamaica Imperial Association, he felt that that Association was a necessity to the country because while it protected the rights of the big man it could also protect the rights of the small man. That Association had money with resultant power. The Society was always considered to be the people's mouthpiece, and if that mouthpiece was closed then they would have to turn to the Imperial Association to take the place of the Society. This attitude of Government to the Society illustrated a cruel form of Crown Government. If the Government thought the services of the Plant Disease Inspectors and Agricultural Instructors should be united, why was the proposal not made that the Plant Disease Inspectors be seconded for service with the Jamaica Agricultural Society. He was glad that the matter had been referred to the Board of Management before any decisive step was taken, as they were able to point out that the scheme would never be carried out with the consent of the people, even if it were done so by Government votes. He further stressed that the services rendered by the members of the Board were free voluntary service. Unlike members of most other Boards of the kind, they received no reimbursement for any expenses whatever. They rendered this voluntary service because they were interested in agriculture and the progress of their country, and he regarded the proposal under consideration as a direct insult to the Society.

Mr. McDaniel referred particularly to the statement in the memorandum "a better system of control over the work of the Instructors of the Jamaica Agricultural Society." He referred to the speech made by His Excellency the Governor at the last Half-Yearly General Meeting of the Society when he said that the Instructors had been wandering over the country without a sufficiently definite object before them. He felt that that was a direct insult to the members of the Board of Management to state that the men they controlled were in that position. He felt that the resignation tendered by the Secretary, which they would consider at that meeting, was the direct result of that statement. He pointed out that the Society had been established and was based

on democratic lines. The construction of a Committee of three would remove the need for a Board of Management, as no self-respecting man could be expected to attend meetings to consider the sale of varieties of seeds for planting, and so on. The Director of Agriculture, he said, as Chairman of the Society's Planning Committee had all the power to get all the co-operation between the Department of Agriculture and the Agricultural Society, and he could not see why this desperate effort should be made to get the control of these Instructors from the Planning Committee. He claimed that the credit for the development of the Citrus Industry was due to the Society, because for a considerable number of years they had been advocating this development, and even in this matter the Department had made a special drive for grapefruit production, and now that there was an enormous quantity of grapefruit in the Island, the demand was not enough to utilize the supply, whereas at the present time there was a greater demand for oranges than could be met. It was unfortunate that even in this matter the Department had again to answer for that. With regard to the exportation of minor crops, that had already been tried out before the Department took part in it, and a member of their Board, Major Moxsy, was one of the principal operators in that scheme. The Government simply carried along what had already been proved to be workable. The Government should recognise the value of the Society, because when men met and expressed their views and interchanged ideas, and discussed their difficulties and smoothed their grievances, it did a lot to stabilize the Government of the country, and it would, in his opinion, be wrong to try to bring this democratic institution under absolute control of Government.

The Board then adjourned for luncheon.

On the resumption there were present: Hon. Mr. Seymour, in the Chair, the Director of Agriculture, Rev. Mr. Thompson, Messrs. Barton, Cawley, McDaniel, Burke, Walker and Phillips; the two Supervisors of Instructors and the Secretary. During the course of the meeting Messrs. McKay, Reid, Cover and McNeil attended.

Continuing, Mr. McDaniel said that the position as outlined in the letter from the Colonial Secretary was not for arrangement of work between the Officers of the Department and the Agricultural Society but for "control of the work of the Instructors." He believed he said that it was because Mr. Baxter felt that the work of the Society was not appreciated why he resigned. He submitted that the prime need before the country at the moment was the necessity for agricultural credit, which would do away with unemployment and make for a better Jamaica. This he said should employ the attention of Government as it was a burning question, a very much larger one than the disbursement and control of £10,000 annually, which was the Government grant to the Society.

Mr. Barton said he could not bring himself to believe that the Government intended to destroy the Society. He felt that Government in their anxiety to advance agricultural progress were trying to remedy something which they believe existed, completely overlooking the fact that the Society had been and still was a most useful organization to the country, and in his opinion His Excellency in his speech at the Half-Yearly Meeting belittled the Board of Management to some extent when he said the Instructors were wandering about in a loose manner, without any definite object in view. However much the Governor had agriculture at heart he should not forget that the Agricultural Society was an agricultural landmark in the country and at least 90 per cent.

of what had been accomplished in the interest of agriculture in the Island had been accomplished by the Agricultural Society. He too was of opinion that the Instructors should be under more direct control than was the case, but he did not agree with the method proposed to bring this about. It would have been more reasonable if a proposal had been made that three nominated members should work with the Instructors Committee to the desired end. He thought it should be pointed out to Government that the Society was handicapped by their limited amount of funds, and if this was remedied the Society would be run on the basis that it should be run, and there would then be no cause for complaint or dissatisfaction. He was of opinion that the matter should be discussed, but not on the lines proposed by Government.

Mr. Thompson said he did not like the trend of things agricultural in the country at the moment, and whilst he did not want to challenge the Governor or the Director of Agriculture in their motives, if an unfavourable impression had been created in the minds of the people then they had to state that impression. Recently he had discovered that there was an intention or inclination to merge, or to reduce the operations of the Society to a minimum. This proposal of co-ordination with the Department of Agriculture appeared to him to be an effort to reduce either the influence or the operations of the Society and also to merge the Society into the Department of Agriculture. He believed in joint co-operation but he did not believe in joint control. He thought the matter could be considered but not the proposals as they were outlined in the memorandum, because that certainly was a reflection on the administration of the Society if it was thought that the Society was spending money for which the country was not getting commensurate results. Less than £10,000 per annum was granted to the Society to carry on instruction which could not be replaced by any other instruction given in the Island. He would like the Director of Agriculture to regard his statement in sober feeling, that while he was willing to do overything to develop agriculture in the colony, he was an adviser, and when his advice conflicted with those who knew the people, and were working with them, he should at least give the expressions of such people due consideration.

Mr. Cover expressed that a lot had been said about this proposal in a general way but he would deal with it from a business standpoint and put up a counter proposition, which would be that the Inspectors of Produce and the Inspectors of Plant Diseases should be combined and more Inspectors distributed over the country, but that Inspectors and Instructors should not be mixed. For forty years the Society had been carrying on this instructional work, which was educational work, and the results were evident in the education of the people much more than could be calculated in money, so that he could not for that reason accept the combination of Instructors with Inspectors. He compared the salaries and travelling allowance paid to Inspectors of Plant Diseases to the amount paid to Instructors for both items combined. He pointed out that the Inspectors were Officers of the Law, whereas Instructors were missionaries. In the alternative, considering that it was said that the Inspectors of Plant Diseases had not enough occupation at the moment, and in view of the fact that there was a call for more instructional service in the Island, he would suggest that the Inspectors of Plant Diseases who could be spared should be seconded for service with the Society, so that the work of the Society could be considerably extended. He expressed that they should reply to the Government stating that it was appreciated that there might be overlapping of agricultural

services, and suggest that such means as he had proposed be used to bring about a desirable change.

The Chairman said he agreed that they ought to be able to make the best use of the people employed both in the Jamaica Agricultural Society and the Department of Agriculture, and that, he thought, was generally accepted. But he could not see what other result would obtain if they adopted the suggestion that had been put before them, except that it would be the disintegration of the Society. As First Vice-President of the Society he felt that he would be acting disloyally to the people if he agreed to such a proposal. As he listened to the other speakers an idea had come to him, and he felt that they should notify the Government that they were not prepared to accept the proposals put forward, but would like to be allowed to make counter proposals in respect of the matter, when there would be opportunity for general discussion and decision as to the best methods of dealing with the situation. He felt that the Plant Disease Inspectors were trained specifically to deal with certain diseases, he would not say they had no knowledge of instructional work also, but he believed they concentrated more in the matter of diseases, while the Instructors always concentrated on instructional work, so that he did not know whether these Inspectors could easily slip into the jobs of instruction. Not that he was commenting on the capabilities of the Inspectors, but he was only pointing out the difference of the two positions. They could, he said, very easily charge the Government with extreme extravagance over a long period of years, because if it could now be demonstrated that there was no necessity for the nine-root treatment of bananas affected by Panama Disease, it could be reckoned that a large amount of money had been wasted by that treatment, and millions of banana trees destroyed unnecessarily, while a small portion of that money granted to the Agricultural Society would have put them in a position to show they were quite capable of carrying out the work which Government desired them to do. He was not laying any blame to Government, because he felt that they acted in a way to protect the country; but if they were going to consider the work done by the Agricultural Society then they would also have to look at the work done by the Department of Agriculture. He agreed with Mr. Barton that the Society had been starved over a number of years and he thought the Government had made a grave mistake when they insisted that the Society should disburse the surplus they had accumulated over a long period, and prevented them from having a fund on which they could draw from time to time to supplement amounts granted by Government to enable them to explore avenues of development they might have taken on. It seemed to him that instead of that development proceeding through the Society which was in the mind of Sir Henry Blake when it was set up, they were now having Board measure. There were now several Boards, all of which needed money to carry on their schemes, and the main body which should have undertaken all these developments, if they had enough money at their disposal, was thoroughly handicapped. He did not want to appear to be a stumbling block in agricultural reconstruction, but he thought the Board should not accept this particular recommendation and ask Government to allow them to submit proposals for consideration, and he hoped the Director of Agriculture would join with them in listening to their proposals which would be the result of their efforts to co-ordinate and meet the situation. He felt that they ought to make the Government feel that this particular form of reconstruction was in their opinion nothing less than a disintegration of the Society. He

personally did not charge Government with the intention of doing that, but eventually—no doubt to the surprise of Government—that would be the result. He would not, although he was prepared to give service to the country in every capacity, be prepared to attend meetings of the Board to discuss matters relating to the sale of seeds and matters of the kind. He submitted that all the good work done by the Society for the past 40 years would be undone by the adoption of the motion under consideration, and he did not think that Government would resent in any way their refusal to accept or recommend the scheme, and perhaps would be pleased to consider their proposals.

The Director of Agriculture rose to submit a motion, but the Chairman said there was a motion in his hands submitted by Mr. McKay as follows:—"That in the opinion of the Board of Management the proposition to place the Instructors under a Committee of three will be a step backwards and the authorities be informed that this Board is against any such change."

The Director of Agriculture pointed out that it was not desirable that the matter should be discarded. The question should be kept open for further discussion and for satisfactory solution. He then submitted an amendment to the motion proposed by Mr. McKay.

After some discussion the following, moved by the Director of Agriculture and seconded by Mr. McKay, was unanimously carried:—"That the question of closer co-ordination of the Agricultural field services in relation to the agricultural policy of the Government and the needs of the Island be considered and reported upon by a Committee of the whole Board of Management at a meeting to be held on March 17th, 1937."

(d) *Letter from Director of Agriculture re Tobacco Industry.* The following letter was submitted:—

19th January, 1937.

No. CO. 189.

"I am in receipt of your letter No. 968 dated 15th January, 1937, forwarding four resolutions on the subject of the Tobacco Industry. The requests contained in the resolutions will receive attention in connection with arrangements for the 1937-38 crop, by which time it is hoped to be in a position to judge of the possibilities of producing a satisfactory quality of exportable cigar leaf tobacco in the parish of St. Elizabeth.

2. The work this year in connection with the Tobacco Industry has been planned from the experimental and demonstration points of view. A trial plot has been established in Eastern St. Elizabeth, and another at Grove Place, in addition to several in other parts of the Island. From the Grove Place and St. Elizabeth plots it is hoped to be able to judge of the quality of tobacco produced in districts where conditions are similar to those where the experimental plots are situated. In addition to this work, the very important question of securing adequate supplies of good seed is receiving attention, and it is confidently expected that the Department will have adequate supplies of seed for the next crop, provided, of course, that the seed is properly used and that the wasteful methods formerly practised by many tobacco growers are avoided.

3. The Tobacco Specialist is exceptionally busy and he cannot be spared from his duties to tour the country at the present time. The success of this year's campaign depends so largely upon his unremitting attention, that I cannot consent to his visiting distant parts of the Island for the present. Later in the season arrangements will be made for him to tour districts which offer promise of producing satisfactory grades of tobacco next season, but it will be necessary that meetings should be arranged at times convenient to him as the work at the Tobacco grading, fermenting and packing station will be continued for several months. A further communication on the subject of these country meetings will be addressed to you in due course.

4. In the meantime it would appear highly desirable that the Instructors of the Society should make themselves familiar with the production of Tobacco at all stages, in order that they may be in a position to assist the movement by giving addresses at Branch meetings and by supervising field trials. Mr. Winckley, the Tobacco Specialist, will always be glad to arrange to meet Instructors at points in St. Andrew

or Clarendon, where tobacco is being grown under the Government scheme, for that purpose.

(Sgd.) A. C. BARNES,
Director of Agriculture.

The Secretary was directed to advise applicants for the help of the Tobacco Expert, that this Officer was under the direct authority of the Director of Agriculture who was prepared as soon as conditions war ranted to send the Expert to different sections of the Island.

(e) *Letter from Agricultural Loan Societies Board re Interest rates on loans.* The following was submitted:—

19th January, 1937.

"In reply to your letter No. 3306 of the 16th inst., I would remark that it is a pity you did not give specific instances of the high interest rates of Loan Banks.

Speaking generally, the rate of interest is 10 per cent., although a very few Banks charge 15 per cent. to 20 per cent.

As from the 1st July last the Government reduced the rate of interest on loans to Loan Banks to 3 per cent. I am issuing a circular to the Banks enquiring to what extent the benefit of this has been passed on to borrowers. Of course it will no doubt be found that some Banks, not indebted to the Board, have been unable to reduce the rate of interest.

In this connection, I would remark that the handling of small loans entails an infinitely greater amount of work than large ones do, and that, therefore, a much higher rate of interest seems reasonable."

(Sgd.) C. J. HAY,
Secy. Agricultural Loan Societies Board.

There was some discussion on this matter during which it was pointed out that the negotiation of small loans entailed a considerable amount of work and the Loan Banks which charged the interest which some members submitted were exorbitant, were not obligated to Government for their funds.

Statement of Accounts.

(a) *Statement for December, 1936* The Secretary stated that this appeared in the minutes.

(b) *Statement for January, 1937*, was submitted as follows:—

STATEMENT OF ACCOUNTS FOR JANUARY, 1937.

Receipts.	Estimates.	Total.
	£ s. d.	£ s. d
To Subscriptions	190 0 0	121 1 10
Affiliation and Journal Fees	190 0 0	164 19 1
Advertisements in Journal	400 0 0	82 8 2
Miscellaneous	10 0 0	11 3 7
Beekeeping Industry Sales		2 11 4
Seeds Department Profit, 1936 37	400 0 0	
Government Grant	10,500 0 0	10,500 0 0
	£11,690 0 0	10,882 4 0
Balance from 31st March, 1936		809 12 7
New Premises: Alterations, etc.		1,000 0 0
Agricultural Shows, Deposits and Refunds ...		31 15 2
Beekeepers Organization		0 5 0
Seeds Trading Account		4,546 3 6
		£17,273 0 3
Less Expenditure per contra		15,320 3 5
Balance		£1,952 16 10
Cash in hand (since lodged)	89 15 9	
Cash at Barclays Bank, Current A/c	399 16 11	
" " " Deposit A/c ...	1,000 0 0	
" Royal Bank of Canada, Current A/c ...	286 18 7	
" Barclays Bank, Special A/c	176 5 7	1,952 16 10

Expenditure.	Estimates. £ s. d.	Total. £ s. d
By Personal Emoluments—		
Secretary's Office Staff	2,142 5 0	1,897 11 5
Instructors and Supervisors	7 516 0 0	6,550 16 2
Instructors' Educational Courses and Attendance at Half-Yearly Meetings	125 0 0	116 5 5
Tools and Contingencies	100 0 0	95 12 2
Secretary's and Office Travelling	100 0 0	100 3 6
Printing and Stationery	100 0 0	116 10 2
Printing and Issuing Journals and Reports ...	850 0 0	848 3 0
Rent and Rates	58 0 0	49 16 5
Postages and Telegrams	10 0 0	7 16 3
Rent of Telephones	27 0 0	21 6 8
Maintenance of Office Equipment	15 0 0	12 7 0
Incidentals	50 0 0	49 17 4
Auditor's Fees	25 0 0	25 0 0
Library Books	10 0 0	3 19 6
Show Equipment Repairs	15 0 0	4 18 7
Bombay Mango Extension Plot; Citrus, Budwood, Livestock Subsidies	150 0 0	94 1 10
New Office Equipment	40 0 0	30 13 7
Encouragement Juvenile Branches	10 0 0	2 2 0
Fertilizer Experiments	25 0 0	5 14 7
Cassava Trial Plots	30 0 0	35 14 0
White Yam Competitions	25 0 0	
Prize Holdings Competitions	150 0 0	
	£11,573 5 0	310,068 9 7
Holdings Improvement Competition, St. Thomas ...		10 0 0
New Premises, Alterations, etc.		68 12 0
Travelling Advances		826 9 5
Plant Disease Control		0 9 6
Shows, etc.		22 8 6
Beekeepers' Organization		3 12 0
Seeds Trading Account		4,055 2 5
		£15,320 3 5

(Sgd.) GLAISTER BAXTER,
Secretary and Treasurer.

(Sgd.) DONALD MACDONALD,
Accountant.

Communications.

(a) *Letter from Messrs. Manton & Hart re Constitution of Society.* This letter stated that the Solicitors had had interviews with the Acting Attorney General and the Colonial Secretary in reference to the Constitution of the Society. The Colonial Secretary had promised to go into the matter and advise them as to what were the views of Government.

(b) *Letter from Major Moxsy re Memorandum of Conference at King's House.* This letter recorded Major Moxsy's disapproval of the proposal to discuss the Memorandum at the Half-Yearly Meeting without the matter having been first dealt with by the Board of Management.

This was noted.

(c) *Letter from Instructors' Conference re Increments.* The following was presented:—

January 22 1937.

To Board of Management:
Gentlemen,

We notice from the minutes of the Board of Management relating to the Estimates for the coming year, that the Board has deemed it wise to withhold increments from the Field Staff of the Society.

We wish respectfully to bring to the attention of the Board the great financial difficulties under which your Staff labours, due to an already low salary-scale, and growing demands on our travelling expenses which tend to impair our efficiency in overtaking our ever increasing duties.

We are therefore asking that the Board sympathetically reconsider the Estimates with a view that the Staff might be given their increments for the coming year 1937-38.

We remain, Gentlemen,
Yours respectfully,

(Sgd.) Glaister Baxter, A. P. Hanson, U. A.
" McLaren, H. A. Darby, C. V. Atkinson, W.
" L. Shirley, L. A. M. B. Coke, Clarence
" Byles, Chas. D. V. Henderson, C. M. A.
" Robotham, P. St. L. Bacque, H. W. Lynch,
" C. C. Hastings, M. N. Thompson, W. D.
" Marr, G. R. Graham, J. A. Graham, D. A.
" Jones, A. L. Virtue, Holon Heron.

Mr. Barton asked if the original estimates had not been forwarded with a supplement as was requested by the Board at one of their former meetings.

The Chairman pointed out that at the meeting of the Board which considered the Estimates it had been decided that no increments should be allowed either to the outdoor or indoor staff. He had made a plea to members when the indoor staff was being considered, but the votes had resulted in a majority against this, except in one case where the Board was committed by contract. When the outdoor staff was being considered, it was therefore accepted and agreed upon that they too would not be given increments. At the following meeting at which he was not present, the Board acted *ultra vires* in reversing the decision of the former meeting without dealing with the matter in a constitutional manner. He had therefore directed the Secretary to carry out the decision made originally by the Board.

Mr. Cover said the Board had erred when they omitted to apply for the increments, as the Government had already accepted the principle as set out by the Society, and the subsequent meeting which directed the Secretary to include the supplementary figures along with the original estimates decided on, merely endeavoured to rectify an error which should not have been made. He was surprised to hear that the decision of the Board as recorded in the minutes had not been carried out.

Mr. Thompson gave notice that at the next meeting he would move that the whole question of increments to the employees of the Society be dealt with.

(d) *Letter from C.S.O. re Report from Coffee Industry Committee.* The following letter was submitted:—

22nd January, 1937.

No. 6948/35.

"With reference to your letter, No. 106 of the 19th November, 1936, forwarding a copy of the Report of the Coffee Industry Committee, and of the Minority Report of Captain Archie dePass, I am directed to inform you that Government considers that much can be done by way of instruction and inspection to improve the position, and will be glad if your Society will co-operate with the Government in doing everything possible to improve the Coffee Industry.

2. I am to suggest that action should be taken by the Field Staff of the Society to give effect to recommendation at paragraph 3 (a) of your letter, that energetic steps should be taken to educate and encourage Coffee growers in the proper methods of cultivation, pruning, fertilizing and curing. The same applies to the recommendation that where conditions are suitable encouragement should be given for the pulping of coffee before curing."

(Sgd.) J. D. Lucie Smith,
for Colonial Secretary.

After discussion the Secretary was directed to issue instructions to the Instructors in the terms of the letter.

(e) *Letter from W. N. Cunningham offering cure for Leaf Spot Disease* was directed for reference to the Director of Agriculture.

Report re possibilities of Extension and Improvement of Agricultural Resources of Portland, returned from circulation with comments. The Secretary read comments on this subject made by the Director of Agriculture, Messrs. Cover and McKay.

The Secretary was directed to transmit these to the Supervisor of Instructors in the section.

Mr. Barnes left the meeting.

Office.

(a) *Secretary's Report on travelling for January* was submitted and noted.

(b) *Resignation from Secretary.* The following letter was read:—

Hon. Geo. Seymour Seymour, O.B.E.,
Kingston.

Dear Sir,

I beg to tender my resignation of the position of Secretary and Treasurer of the Jamaica Agricultural Society.

I regret very much having to do so but, after mature consideration, have come to the decision that having an opportunity presented of a more lucrative position for an assured term of years it is wise to avail myself of it.

I would specially emphasize how grateful I am and will always be, to the Members of the Board of Management whom I have served, for the consistently kind, helpful and considerate treatment that I have always enjoyed from them.

I ask the favour of the Board's sanction for relieving me of a portion of the necessary term of notice, as I am required to take up my new duties during the month of March, 1937. I trust the favour will be granted me.

(Sgd.) GLAISTER BAXTER,
Secretary.

The Rev. W. J. Thompson, Messrs. U. Theo. McKay, R. A. Burke, Sidney Barton, D. D. Phillips and C. O. Cover, Hon. E. A. McNeill and Mr. T. P. V. McDaniel spoke in appreciative terms of the Secretary's services with the Society and expressed their regret that these services should be terminated. It was suggested that some endeavour be made to find out if there was any possibility of retaining the Secretary's services.

Hon. Mr. McNeill suggested that if the Secretary had to go, in appreciation of his services a grant should be made to him of three months salary.

It was agreed that Mr. Baxter should be relieved as he requested, of a portion of the necessary term of notice.

On Mr. McKay's suggestion the Board agreed that a deputation consisting of the First Vice-President and the Hon. C. A. Reid, be appointed with a view of retaining the services of the Secretary if possible and discussing the matter with Government with a view of making any necessary arrangements in connection therewith.

The First Vice-President, after expressing his satisfaction with the Secretary's work, worth and loyalty and the improvements in the general affairs of the Society during his regime, said he would be happy to do all he could to carry out the Board's desires in retaining the services of the Secretary.

Matters Referred from Half-Yearly General Meeting.

(a) *Change of date of Meeting.* The Secretary submitted an extract from the minutes of the last Half-Yearly Meeting suggesting that the

small attendance at that meeting was due to the change of the regular date and requesting that in future the Half-Yearly Meeting in January should be held on the second Thursday as had been the custom for a number of years.

The Secretary was directed to bring the matter up at the next regular meeting of the Board so that a resolution could be passed to have the matter adjusted.

(b) *Resolutions re* (i) *Agricultural Foreman.* The Secretary was directed to advise the Frankfield Branch which asked that the system of employing Foremen be extended as rapidly as possible, that the Board had planned to employ three additional foremen during the coming financial year, and this was reflected in the Estimates submitted to Government.

(ii) *Black Spot Disease of Bananas* The Secretary was directed to say to the Manchester Branches Associated which asked that every effort be made to check or eradicate this disease, that the matter had been taken up and everything being done towards that end.

(iii) *New Agricultural Industries.* This resolution from the Manchester Branches Associated asked that the Government be urged to adopt feasible schemes of aiding or creating new industries and further developing existing industries, and the Secretary was directed to forward same to Government.

(iv) *Sea Island Cotton.* Resolution from the Nain Branch asked that the urgent necessity for the development of this Industry be brought to attention. The Secretary was instructed to refer it to the Planning Committee.

(v) *Pig Rearing Industry.* This resolution from the Mocho Branch requested that the Department of Science and the Agricultural Society intensify their efforts to establish an organized Pig Rearing Industry with a view of producing pig products for local needs.

The Secretary was directed to refer this to the Live Stock Committee.

Report from Instructors' Committee.

The recommendation from the Instructors' Committee that the application from the Adelphi Branch in St. James for affiliation, be granted, was adopted.

Diseases of Plants and Animals: Insect Pests.

(a) *Panama Disease of Bananas—Report for November.* The Secretary placed on the table the return for the month of November, recording the incidence of Panama Disease of Bananas in the Island and said that copies had been issued to the members of the Board.

Shows.

(a) *Letter from St. Elizabeth Branches Associated requesting that balance of their account due be remitted* and

(b) *Application from Hanover Branches Associated for 1st August,* 1938, were both listed for the attention of the Shows Committee.

Resolutions from Branches.

The Secretary was directed to deal with the resolutions on the following matters:—

(a) *Springvale re Parochial Roads.*

(b) *Bloxburgh re road.*

(c) *Hanover Branches Associated re* (i) *Road;* (ii) *Work on Roads;* (iii) *Fertilizers;* (iv) *Payment of Taxes.*

(d) *Porus re Agricultural Headman.*

(e) *Portland Branches Associated re* (i) *Agricultural Headman;* (ii) *Land Settlement.*
(f) *Granville re Land Settlement.*
(g) *Mt. James re Police Protection .*
(h) *O'Meally re Buying Bananas by Weight.*
(i) *Toll Gate re Compulsory Education.*
(c) *Hanover Branches Associated re* (i) *Road;* (ii) *Work on Roads;*

Authorised Persons.

Return of Arrests for Quarter ending 31st December, 1936 was submitted and the Secretary directed to publish same in the Journal.

Other Business.

(a) *Memo from C.S.O. covering copies of Report on the Jamaica Exhibit at the British Industries Fair* 1936, was submitted and the Secretary was instructed to circulate the report.

(b) *Letter from W. Quintin Williams re Cassava Products,* and

(c) *Letter from W. Quintin Williams re New Industries,* were held for reference to the Staple and Minor Products Committee.

(d) *Letter from Portland Central Branch proposing that Authorised Persons* be permitted to make arrests for the stealing of goats was not sustained by the Board.

(e) *Leave of Absence*: Application from Mr. W. Harper Watson for four months leave as from the 1st February, 1937, was granted.

(f) *Letter from Jamaica Beekeepers Organization re Exhibit at Knutsford Park Show.* This letter stated that the Organization was organizing a display at the forthcoming Knutsford Park Show and asked for the co-operation of the Society in respect to the services of the Bee Instructors, and financial help towards expenses.

The Secretary stated that he was preparing a stand on which to house the exhibit and it was agreed that the Bee Instructor should render what assistance he could.

(g) *Secretary's Reports on*: (i) *Coolshade ex-Soldiers Land Settlement in St. Catherine.* The following was presented:—

2nd February, 1937.

To the Board of Management:
Gentlemen,

I beg to report that I visited the Coolshade ex-Soldiers' Settlement in St. Catherine on Thursday, 28th January in company with Supervisor Hanson and Instructor Byles. I also took up one of the Agricultural Foreman so that he could familiarize himself with conditions in case he has to undertake work there.

We rode over as much of the property as we could cover in the five hours.

The property consists of red dirt formation in pockets, common to various limestone areas in Jamaica. These pockets represent, roughly, about one-fifth of the area, the rest being very nearly uncultivatable limestone rock hills.

I have been informed that there are very near to 400 ex-Soldiers settled on these lands.

The sub-division of the property, which has been done in 5-acre lots, has been done with very little regard to the agricultural value of the holding, and in very many instances there is hardly enough tillable soil to afford the settlers support, except on the most primitive standard of living. Some attention should have been paid to the area of useful soils and some reservations made to control deforestation which is rapidly taking place as a large portion of the income of the settlers is now being derived from coal and wood, which source cannot last indefinitely and which, at the end of its exploitation will result in practically complete deforestation and consequent depreciation of the country and possibly a high proportion of abandoned holdings. There is a large proportion of the settlers who seem earnest and serious in their desire to make good. There has been much abandonment of holdings and reallotment of holdings since the beginning of the project.

All the soils there are fitted for growing as permanent crops citrus, annatto, also coffee in the cooler glades, and a very small area would grow bananas under mulch, but this will necessitate agricultural instruction. Agricultural instruction is a prime

necessity for the settlement, as a large percentage of the people have not been recruited from the truly agricultural classes and are relatively new to conditions.

The following catch crops can also be grown : corn, peas, sweet potatoes, Irish potatoes, vegetables, yams and other tubers.

The housing conditions require careful consideration by those responsible for making a success of the settlement.

The Board at their last meeting authorised the sum of £5, at the request of the Hon. Colonial Secretary, for the provision of a free distribution of seed to the settlers. This sum would average out at about 3d. worth of seed per man, and if it is desired to help these people in any lasting way, such a sum is entirely inadequate.

I summarize what I consider the weaknesses of the settlement :

Method of Allotment.
Size of Allotment.
Lack of housing.
Lack of a whole time Officer of the Agricultural Foreman class, resident in the area for agricultural instruction.
The need of an object lesson in the shape of a small demonstration farm for the benefit of the settlers, and trials of various crops to prove their suitability to the area.
Lack of any form of livestock, without which permanent agriculture can hardly be built up in such an area which has in the past been impoverished by exploitation on the part of tenants.

I feel that an admirable opportunity presents itself for making this settlement, even at this late stage, a success, if the weaknesses pointed out are satisfactorily adjusted.

I think that a vote from Government of £500 expenditure per year for three years, which could be properly planned for and carried through, would profoundly influence the success of this settlement and ensure the settlement of the ex-Soldiers on the lands as homesteaders, which I feel must have been the object of Government action in this direction in the past.

(Sgd.) GLAISTER BAXTER,
Secretary.

The Secretary was instructed to forward the report to the Government and also to bring up the matter of the £5 grant for Seeds in this matter, and the general question of Land Settlement for discussion at the next regular meeting of the Board.

(ii) *Cassava Trial Plots.* The following was presented and adopted :—

2nd February, 1937.

To the Board of Management :
Gentlemen,

I beg to report that I visited the Cassava Trial plots—one at Llandewey, one at Guanaboa Vale and the other in St. Elizabeth—and find them well established and in good order and promising to serve the purpose for which they are intended.

(Sgd.) GLAISTER BAXTER,
Secretary.

(iii) *Cashew Nursery.* The Secretary submitted the following :—

2nd January, 1937.

To the Board of Management :
Gentlemen,

I beg to report progress in the Cashew Nursery situated in Mid-Clarendon.

At the present time there are 8,000 growing plants, which will be increased to 10,000 in the next week or two, all of which will be available for distribution in the Spring and early Fall of the present year.

Each plant I estimate will cost slightly under ½d. They are established in large sized bamboo pots. They are growing well and appear very healthy. They have been established from selected seed.

I invite your consideration as to regulations governing the distribution. My suggestion for these is that we charge 1½d. for each plant distributed and undertake to refund 1d. at the end of a twelve month period for each plant that has been successfully established.

(Sgd.) GLAISTER BAXTER,
Secretary.

(iv) *Red Peas Plot.* The following was presented and noted :—

3rd February, 1937.

To the Board of Management :
Gentlemen,

I inspected the Society's Red Pea plot at Temple Hall and find it in good condition. The fertilized half of the plot offers a spectacular demonstration of the value of fertilizers on that type of soil and promises excellent results, which will probably prove that the application of appropriate fertilizers will be a profitable commercial proposition.

(Sgd.) GLAISTER BAXTER,
Secretary.

(h) *Application from C. A. Crearer for two weeks leave of absence* as from the 15th February, was granted.

(i) *Memorandum from the Instructor in Beekeeping* was submitted suggesting that a presentation of a collection of different grades of Jamaica Honey be made to the Rt. Honourable Lloyd George from the Jamaica Beekeepers through the Jamaica Agricultural Society.

This was agreed to.

The meeting then adjourned to Wednesday, the 3rd day of March, 1937, at 11.30 a.m.

The following is printed in this Journal at the express request of Government. We need hardly say that our Board of Management is in entire sympathy with the appeal.

ED.

DO NOT BURN BUSH!!

1. Law 17 of 1902, "The Country Fires Law, 1902," gives the Governor power to prohibit the setting of fire to land.

2. Why give the Governor cause to prohibit by Law the burning of bush when you know that such burning causes you to lose valuable plant food?

3. Burning bush at times causes great loss to yourself and your neighbours by the fire spreading and damaging acres of grass or forest trees which take years to recover.

4. Burning bush destroys the material which you should use for adding humus to your soil. This rotted material in the soil helps your plants to stand up against drought.

5. Do not wait until the rains come to cut down bush . Do so weeks ahead of planting and allow the bush and weeds to rot. You are adding plant food to your soil.

6. Arrange your planting months ahead so that you will have sufficient time for cutting down and cleaning up your land without burning.

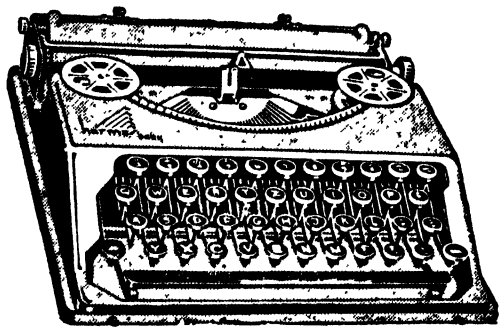
7. Do not use fire to clean up your land. You are burning up valuable plant food which your plants require.

8. Share this knowledge with your neighbours and friends and you will be helping to make your Island more progressive.

9. Do NOT BURN BUSH. Remember it is an offence for which you can be punished at Law, but it is also an offence against the natural beauty and productiveness of your own fair land.

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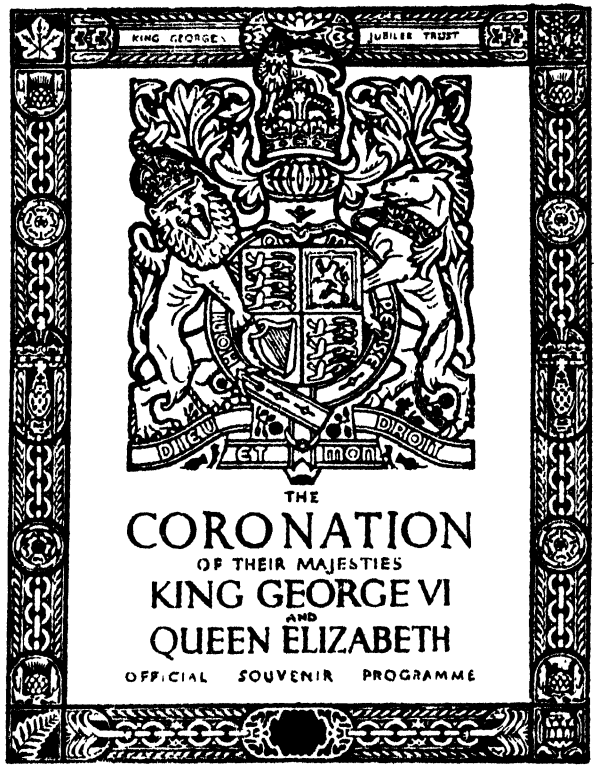
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ON BUYING A FERTILISER.

By H. H. CROUCHER, B.Sc., A.I.C., Agricultural Chemist.

Large increases in the consumption of fertilisers in Jamaica are occurring annually. Many persons are using fertilisers for the first time. They do so in the elementary belief that by adding these compounds to the soil they will increase their crop and thereby their profits. The majority of these users appreciate the fundamental theory behind the use of fertilisers, and appreciate further that the composition of the fertilisers they use should bear some relationship to the soil to which it is applied, and to the plant they wish to grow.

Plants require many elementary substances to enable them to grow. Of these all but three, or four if calcium or lime is included, are usually present in the soil or air in excess. The three exceptions are nitrogen, phosphate (described as phosphoric acid), and potash. A decrease in the productivity of a soil is normally due to a dimunition in the supplies of one or more of these three substances. The object of applying fertilisers is to ensure that the supplies present in the soil of these three substances are adequate to ensure maximum growth and crop production.

There has been recently a considerable amount of propaganda in Jamaica concerning the value and benefits of using artificial fertilisers. As a result there is a tendency for any planter, whose crops are not progressing as favourably as he wishes, to turn immediately to artificial fertilisers for help.

There are many persons wishing to sell a planter fertiliser and to proffer advice on the best fertiliser to use. While it is in the interest of the salesman for him to give sound advice, it is extremely difficult for him not to be biassed in his opinions. The reputation of more than one proprietary fertiliser in Jamaica has been built on good salesmanship rather than on results in the field.

The object of this article is to guide the planter whose crops are not progressing satisfactorily, and who is tempted to buy a fertiliser, and to enable him to judge if he is getting value for his money. Faced with such a problem, the planter should examine it in the following stages:—

Stage I.—CULTIVATION.

Before any attempt to purchase a fertiliser is made, the planter should first assure himself that the cultivation of his land is satisfactory. There may be large stocks of nutrients present in the soil which are not in a suitable or available condition for the plant, or, alternatively, the tilth of the soil is not satisfactory for plant growth. It is obviously waste of money to supply yet further amounts of nutrients in these circumstances. The stocks in the soil may be brought into a condition suitable for the plant by proper cultivation. The planter should see that his land is sufficiently drained; that it is receiving sufficient aeration by ploughing or forking; that it has not 'packed.' Hillside land should be carefully inspected to ensure that any poor yield is not due to the surface soil, which contains the greater part of the plant food, being washed down the hillside in every rainstorm. There are many more bananas and coconuts in Jamaica suffering from lack of cultivation than from lack of nutrients. Deeper and better cultivation is causing greater increase in the yield of sugar cane in Jamaica than is the application of fertilisers. In the end, it is cheaper to cultivate than to use artificial

fertilisers. Artificial fertilisers will not give satisfactory results in land not properly cultivated or drained, and it is waste of money to apply them.

A further cause of poor growth may be lime deficiency or acidity of the soil. Some crops are more sensitive to lime deficiency than others. If lime deficiency is suspected, preliminary soil tests should be made using a small field testing outfit, or samples submitted for accurate determinations to the Department of Agriculture. The question of lime and liming has previously been considered in this Journal. (Ref.)

Stage II.—Determining the Type of Fertiliser Required.

Having decided that cultivation, drainage and water supply are satisfactory, that there is no lime deficiency, and that an additional supply of nutrients is required, the next consideration is the type of fertiliser required.

The fertiliser required will depend on the plant to be manured. Thus sugar cane and bananas require large supplies of nitrogen; citrus requires only a moderate supply of nitrogen and a high proportion of potash and phosphate.

Firstly, it must be decided which of two methods of application is going to be adopted. If it is required merely to replace some deficiency in the soil, then small applications of a fertiliser containing only one nutrient, e.g., nitrogen, may suffice to bring back the plant into a healthy condition. Or, secondly, it may be decided to fertilise heavily in order to obtain high increases in yields. On most soils it is necessary to use for this purpose a fertiliser containing the three nutrient substances, or a 'complete fertiliser.' The success of the latter procedure is dependent on many factors, the chief of which are adequate water supply and suitable soil texture. Both types of fertilising are practised in Jamaica.

A complete fertiliser should be a 'balanced fertiliser,' that is, one which, in combination with the nutrients already in the soil, will provide nutrients in the exact proportion required by the plant. Superficially it appears that the amounts required could be derived at by chemical analysis, that is, by determining the amount of nutrient removed by the crop each year and the amount supplied by the soil, and adjusting the fertiliser application to make up the balance. Unfortunately the procedure is not so simple. Different rates of wastage of the nutrients in the soil, the effect of the soil on the fertiliser, and the effect of the fertiliser on complex bacteria processes, influence the apparent requirements, so that they may bear little relationship to the amount of nutrients consumed by the plant.

In any circumstances, a knowledge of the composition of the soil is helpful. The chemical analysis of a single sample, or of relatively few samples of soil, cannot determine the exact composition and amount of fertiliser required. The best composition and amount can be determined only by carefully conducted field trials and experiments. The chemical examination of the soil assists in four ways. Firstly, it may indicate any serious deficiency in the soil, particularly a lime deficiency. Secondly, it may indicate a basis on which the field experiments may be formed, and thus simplify such experiments. Thirdly, it may show the similarity or dissimilarity between the unknown soil and soils for which the best fertiliser mixture has been already determined. The

Ref.: J.A.S. Journal, Vol. XXXVI, 1932, No. 11, p. 537.—"Lime and Soil," by H. H. Croucher, Agric. Chemist.

results may indicate whether a similar treatment may be given or whether modifications are necessary. Fourthly, the examination should detect any of the substances which are harmful to plant growth, and which occasionally occur in Jamaican soils.

The practice of making a few approximate chemical soil tests, and on the basis of the results, recommending the application of a fertiliser mixture of definite composition, is misleading, and may be costly to the individual applying the manure.

The only satisfactory basis for prompt advisory work with regard to artificial fertilisers is to have information from a detailed soil survey available, and one which has been linked with a series of field experiments on the predominating crops.

Stage II therefore consists of obtaining a careful chemical examination of samples of soil, and advice from someone with experience in the use of fertilisers on that soil, or a knowledge of the results of field experiments on similar soil.

The advice of neighbours should be regarded with caution. It is usually more satisfactory to conduct field trials on the area to be treated. They require considerable thought and personal attention, but they more than repay any trouble and expense they may incur.

Stage III (a).—*Pricing the Fertiliser.*

Having decided on the composition of the fertiliser required and the appropriate amounts of nitrogen, phosphoric acid and potash it should contain, the next step is to purchase these requirements.

The nutrient elements can all be obtained in more than one form.

Thus Nitrogen can be obtained in the form of Ammonia (NH_3), nitrate (NO_3), organic, urea, cyanamide. The unit cost of the different forms

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differs slightly. The relative values of nitrogenous fertilisers in various forms has already been described (Ref.), and cannot be discussed in the present report. Nitrogen is normally applied in the form of ammonia, and it is on this basis that the calculations following are made.

Phosphoric Acid (P_2O_5) may be applied in the form of Superphosphate, basic slag, ground rock phosphate, bone meal. The phosphoric acid in the first two of these forms is soluble in water, and is thus more readily dispersed through the soil than the insoluble forms. Phosphoric acid as Superphosphate is used as a basis in these calculations. When nitrogen is also required, phosphoric acid may be readily applied in the form of ammonium phosphate compounds such as Nicphos and Ammophos. The phosphoric acid in these compounds is almost entirely water soluble.

Potash (K_2O) may be applied either as Sulphate of Potash, Muriate of Potash or Kainit. The latter two forms contain chloride which is injurious to certain crops, e.g., citrus, bananas, tobacco. Sulphate of Potash is somewhat easier to handle than the other two types, particularly when mixtures are required. Sulphate of Potash is thus used as a basis in the following calculations.

NOTE: The form in which each nutrient is calculated is described in chemical symbols, nitrogen (N), ammonia (NH_3), phosphoric acid (P_2O_5), potash (K_2O)

There are on the market in addition to the ordinary type of inorganic chemical fertilisers, a number of organic fertilisers, or fertilisers with an organic base. The majority of such fertilisers contain all three nutrient substances. Various claims are made by the purveyors of such organic fertilisers as to their advantages over the ordinary chemical fertilisers. Their chief virtue is that their nutrients tend to become available to the plant slowly, and hence their is less wastage than in an inorganic fertiliser. Organic fertilisers provide a useful method of applying nitrogen to the soil in that no unwanted residue is left. The belief that the addition of 3—4 cwts. of a fertiliser containing a proportion of organic matter can materially improve the organic matter content and the tilth of the soil is erroneous. If the soil requires organic matter it should be applied as pen manure, by using green manures, or plant residues, which can be applied at the rate of 10-20 tons per acre In general, if an organic base fertiliser can be obtained at the same price as an inorganic fertiliser of the same nutrient content, select the organic base. It is seldom worth paying high prices, however, for the organic base.

The basic substances which will probably form the fertiliser are:—

Sulphate of Ammonia, which should contain about 21 per cent. of Nitrogen.

Superphosphate, which should contain 16-18 per cent of water soluble Phosphoric acid.

Sulphate or Muriate of Potash, the former should contain 48% soluble Potash, the latter 50% soluble Potash.

If the advice received has been in terms of pounds of one, two or three of these substances per acre, the procedure is simple and obvious. Any reliable dealer will quote the current price for these manures. If necessary, the prices can be checked by enquiring from one or two dealers. On each occasion the guaranteed content of Nitrogen, water soluble Phosphoric Acid, and/or Potash should be demanded. There should

Ref.: J.A.S. Journal, Vol. XXXVI, 1932, No. 12, p. 594. "Nitrogen and Soil." By H. H. Croucher, Agric. Chemist.

be little differences in either prices quoted or guaranteed content of these manures from different sources.

More often, particularly if a complete fertiliser (i.e., a fertiliser containing all three nutrients) is required, it will be more satisfactory and cheaper to buy one ready mixed fertiliser rather than three separate substances for separate application.

The difficulties of obtaining a uniform mixture; of obtaining exact quantities of the various constituents; of obtaining all constituents in the same form, all granular, or all powder or crystalline; frequently are sufficient to warrant the purchase of a ready made mixture or compound fertiliser. A number of standard compound fertilisers are placed on the market by reliable firms, and one sufficiently alike in composition to that required can often be obtained. The cost of these compound fertilisers, when the saving of time and carriage is considered, is little more than that of a mixture. If no compound fertiliser of the required composition is available, a ready made mixture from simple ingredients should be ordered. A small additional charge for efficient mixing is usually well worth the expenditure.

The composition, and consequently the price, of such mixtures varies, and it is not always easy for the purchaser to judge whether a fair price is being charged.

The fair price for any mixture can be judged on the following basis:—

The value of different manures is compared on what is known as a unit basis. The price of a unit of nitrogen can be calculated by obtaining the price of Sulphate of Ammonia per ton, and dividing it by the percentage of nitrogen it contains, the result being the unit price of ammonia nitrogen. A unit is one pound per hundred pounds.

Similarly, the unit price of water soluble phosphoric acid can be obtained by ascertaining the current of Superphosphate and dividing it by

FERTILIZERS.

Sulphate of Ammonia	...	N. 20.6%		
Sulphate of Potash	...	K_2O. 48.7%		
Nitrate of Soda.				
Enpekay No. 1		N.12.4%	P_2O_5 12.4%	K_2O 14.9%
" " 2		10.3%	10.3%	20.7%
" " 4		10.2%	20.4%	10.0%
" " 5		8.0%	16.0%	16.0%
" " 6		7.0%	24.0%	10.0%
Nicifos No. 1		13.8%	41.4%	
" " 2		17.9%	17.9%	
" " 3		15.6%	31.2%	
Nitro Chalk		N.15.5%—Carbonate of Lime 48%		
Superphosphates.				
Urea		N.46.0%		

Anglo Guano Mixtures for Bananas and Canes.

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the percentage water soluble phosphoric acid it contains. The unit price of potash can be determined by dividing the cost of a ton of Sulphate of Potash by the percentage of soluble potash it contains.

For example:—

	Price per Ton.	Per cent Nutrient.	Unit Price.
Sulphate of Ammonia	£7 10s.	21% N	$\frac{150s.}{21} = 7.1s.$
Superphosphate	£4 0s.	18% w.s. P_2O_5	$\frac{80s.}{18} = 4.5s.$
Sulphate of Potash	£11 0s.	48% K_2O	$\frac{220s.}{48} = 4.6s.$

Note: The prices for fertilisers quoted in this article, while representing the current prices approximately, must in no way be taken as the standard prices for fertilisers. Such prices fluctuate with the market, and must be ascertained by enquiry from recognised fertiliser agents.

Figures obtained in this way may be used in two ways:—

(a) for comparing one type of fertiliser with another. For example:—

To compare the cost of phosphoric acid in Superphosphate with that in Basic Slag.

Price per Ton.		Percent Nutrient.	Unit Price.
Basic Slag	£3 10s.	16% w.s. P_2O_5	4.4s.
Superphosphate	£4 0s.	17% w.s. P_2O_5	4.7s.

The unit price of water soluble phosphoric acid in basic slag is thus less than the unit price in Superphosphate. In these circumstances, and other considerations being equal, it would be cheaper to buy phosphoric acid as Basic Slag rather than as Superphosphate.

(b) For estimating the value of mixtures.

For example:—

A mixture of composition 5:9:12 (5 per cent Nitrogen, 8 per cent water soluble phosphoric acid, and 12 per cent Potash) is offered at £10 per ton. It is desired to determine if this is a reasonable price on the basis of the assumed current prices already given.

The cost of the mixture should be:—

Nitrogen	... 5 units at 7.1s. per unit	= 35.5s.
Phosphoric Acid	... 8 units at 4.5s. per unit	= 40.5s.
Potash	... 12 units at 4.6s. per unit	= 55.5s.
	Total	**131.5s.**

Price, £6 11s. per ton.

Thus the correct value of the manure is £6 11s. per ton. On this value must be added a charge for mixing, say 10/- per ton. Therefore, on the assumed basis, the maximum price of £7 1s. per ton should be charged for the manure.

The procedure should thus be:—

Ascertain the current prices of Sulphate of Ammonia, Superphosphate and Sulphate of Potash.

Ascertain the guaranteed percentage of nitrogen, phosphoric acid and potash contained in each respectively.

Divide the price in shillings by the corresponding percentage of nutrient. The result is the unit price of the nutrient substance.

Multiply the unit price of each nutrient by the percentage of the corresponding nutrient in the mixture to be priced.

Add the three products and the result should be the correct value of the mixture exclusive of mixing charges.

Note:—The composition of a mixed or compound fertiliser is frequently described in a series of two or three numbers, e.g., 4 :8 or 4 :0 :12 or 4 :8 :12. The first number should indicate the percentage of Nitrogen (not ammonia), the second the percentage of Phosphoric Acid (not calcium phosphate), and the third the percentage of Potash contained in the fertiliser. Occasionally where low numbers in simple ratio are used, the numbers indicate the ratio of the nutrients it contains. Thus, the third fertiliser mixture referred to above may also be described as a 1 :2 :3 mixture.

Stage III (b).—MAKING A MIXTURE.

The planter may decide that he desires to mix his own manure. The majority of artificial manures may be safely mixed with the following exceptions:—

Manures containing ammonia (e.g., Sulphate of Ammonia, Niciphos,

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SULPHATE OF POTASH
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Ammophos, Ammonium phosphate, Nitrochalk, organic manures) should not be mixed with lime, basic slag or ashes, or cyanamide.

Superphosphate should not be mixed with lime or basic slag.

Muriate of Potash and Kainit tend to make mixtures set in lumps after mixing.

If a mixture containing 5 per cent. nitrogen, 9 per cent. soluble phosphoric acid, and 12 per cent. potash is required, the amounts of each constituent required may be calculated on the following basis:—

$$\text{Nitrogen} \quad \frac{5 \times 10}{21} = 2.5 \text{ cwts.}$$

$$\text{Phosphoric Acid} \quad \frac{9 \times 10}{18} = 5.0 \text{ cwts.}$$

$$\text{Potash} \quad \frac{12 \times 10}{48} = 2.5 \text{ cwts.}$$

In general, for preparing 10 cwts. of mixture, the percentage of nutrient required in the mixture is multiplied by ten and divided by the percentage of the same nutrient contained in the corresponding simple fertiliser. If the total calculated weight of the three fertilisers is greater than 10 cwts., then it is not possible to prepare a mixture having the proposed percentages of nutrients from such constituents. If the total calculated weight of the three fertilisers is less than 10 cwts. then the difference must be made up by using an inactive filler such as sand or soil. For total amounts other than 10 cwts., the weights of the constituents are multiplied by the appropriate factor.

Summary.

A planter who believes that his crops are not progressing satisfactorily should consider the situation along the following lines:—

Firstly, he should ensure that the cultivation, the drainage system, the water supply, and the lime content of the soil are adequate. Stocks of nutrients may be present in the soil, but a poor condition of the soil may render them unavailable to the plant.

Secondly, he should, if possible, have his soil examined chemically.

Thirdly, he should decide whether he wishes to use small amounts of a single fertiliser or large quantities of a complete balanced fertiliser.

Fourthly, he should ascertain from persons of experience with his soil type, and with the aid of field trials and the results of the chemical examination, the best fertiliser and combination of fertilisers to use.

Fifthly, he should make careful enquiries concerning the current price of fertilisers, and determine for himself by using simple calculations whether he is getting value for his money.

The Sale of Fertilisers.

It is not generally known that the sale of fertilisers in Jamaica is controlled by law. Law 18 of 1901 states that—

"Every person who sells for use as a fertiliser of the soil any article manufactured or compounded in the Island or imported from abroad shall give to the purchaser an invoice stating the name of the article and whether it is an artificially compounded article or not, and what is the percentage of Nitrogen, soluble and insoluble phosphoric acid and potash, if any, contained in the article, and this invoice shall have effect as a warranty by the seller of the statements contained therein."

"For the purpose of this Law the expression . . . 'soluble' and 'insoluble' shall respectively mean soluble and insoluble in water."

Numerous instances of sales of fertilisers where this law has been disregarded have been noticed. Members of the Jamaica Agricultural Society should use the law to protect themselves when they purchase any fertilisers by demanding from the purveyor a written statement of the guaranteed analysis of their purchase.

The statement should express the guaranteed composition of the fertiliser in the following terms:—

Name of Fertiliser.

	Per cent.
Nitrogen	do
Total Phosphoric Acid (P_2O_5) ...	do
Water Soluble Phosphoric Acid (P_2O_5)	do
Total Potash (K_2O)	do

While many dealers supply a statement of the guaranteed analysis of the fertilisers they offer, the percentage of nitrogen is frequently quoted as ammonia, and the content of water soluble phosphoric acid is omitted. Purchasers should assure themselves that the nitrogen figure given represents the content of nitrogen expressed as Nitrogen and not as Ammonia. The latter figure is higher than the former, and its use may be misleading to the uninitiated. The method of converting the percentage of nitrogen expressed as Ammonia (NH_3) into nitrogen expressed as Nitrogen (N) is to multiply the ammonia percentage by 0.824.

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EDITORIAL COMMENTS.

We publish elsewhere in this issue of the Journal, two letters from the Acting British Consul General, Valparaiso, Chili, to Mr. A. O. Soutar, President of the Stony Hill Branch of the Jamaica Agricultural Society, who has taken a great deal of interest in the resuscitation of the Peas Industry in Jamaica.

Everyone who attented the two last ordinary Half-Yearly General Meetings of the Jamaica Agricultural Society will recall his able advocacy for this Industry as a valuable one to the country, and especially for its small farmers. One very important point that he emphasized was the value of the crops as a rotation crop, which point is a very sound agricultural one.

The letters published are of great interest as they authoritatively explain the past low prices of Chilean peas, the present sudden rise in price of the same commodity and the hazard which threatens the Industry in Jamaica by the probability of a sudden drop in prices at any time and the danger consequent on the uncertainty of the present price position The situation indicates that the Jamaica Agricultural Society should continue its agitation to obtain tariff protection for Peas which will place the farmers who have been encouraged to produce in a secure position and to protect them from what is obviously unfair competition through the enormously devaluated exchange and low rates of wages, which latter pre-assumes a standard of living, which no true Jamaican can passively accept, for the small farmers of the Colony.

We are sure that our Board of Management will keep the situation before them and do as they always do to endeavour to influence action favourable to an important agricultural industry.

COUNTRY FIRES LAW.

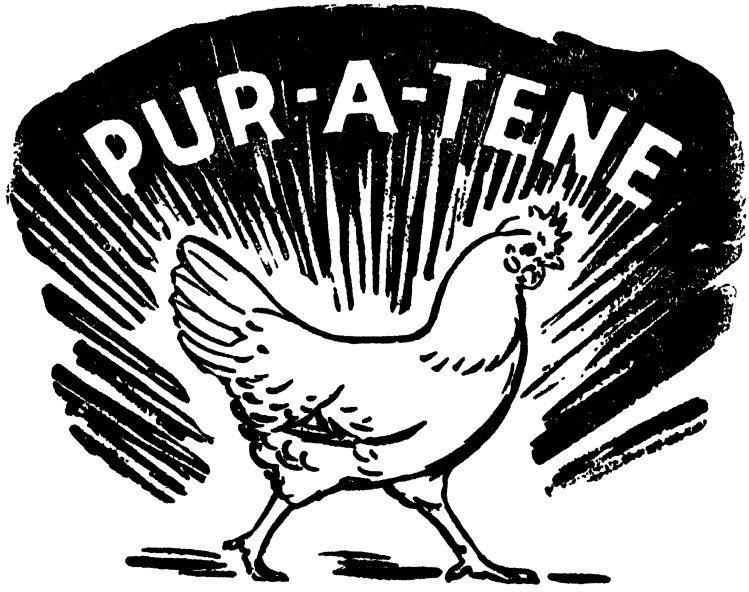
The attention of members and Branch Societies is directed to the Proclamations made by Government under the Country Fires Law, Law 17 of 1902, prohibiting the setting of fires to lands in the parishes of St. Thomas, Portland, St. Mary, St. Ann, Hanover, St. Elizabeth and Manchester. Proclamations are already in force which apply to Trelawny and St. Andrew.

Every effort should be made to bring this information to the attention of everyone in the parishes, and to discuss the matter at Branch meetings and to impress the people with the evils of promiscuous burning of land and the benefits of afforestation.

KILLING TREES

It has been found, consequent on study in Trinidad by the Assistant Conservator of Forests for that Colony, that trees may be effectively killed by girdling same with an axe and applying a solution of Sodium Arsenite mixed at the strength of 1 lb. to 1 gallon of water thrown into the groove around the tree made by the girdling immediately after the girdling has been done.

The girdling consists of making a ring around the tree by downward directed axe cuts which run into each other forming a groove or trough around the tree, into which the poison may be poured.



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AGRICULTURE ON SMALL HOLDINGS.

By ARTHUR THELWELL, Agricultural Superintendent.

Lecture Delivered at Agricultural Short Course at Hope.

(Continued from January Issue.)

IN ST. ELIZABETH.

A word about the development of the small holder in St. Elizabeth. His splendid development of character has been ascribed to various reasons:

1. Effect of his food—Cassava instead of Yam.
2. His Ancestors—sturdy, seafaring blood.

The view I suggest is that the development of his character has been due to the fact that he arrived at the "security of tenure stage" a long time ago, that he has therefore progressed because this security of tenure has reacted on his character.

His further progress has been retarded, not because of poor seasons as is popularly thought, but because he has not—

i. produced an exportable surplus which in turn is due to
ii. lack of capital to create environment; that is, if he had money he would provide wells and by means of irrigation offset small rainfall.

It is to be hoped that in the Tobacco development he will be able to overcome obstacle No. 1, and as a result in time, obstacle No. 2, and so go on from strength to strength.

LIMITATION OF THE PLANT.

A word at this stage about the limits imposed upon the small holder from the point of view of the plant itself as such is indicated.

We have at hand one outstanding illustration in Coffee as a crop. We are standing by watching, as it were, a passing show. This Island, once noted for its coffee, is steadily losing what seemed an assured market and for this many reasons are assigned.

One real reason appears to be that any crop, which necessitates that further stage involving preparation in large bulk so as to put out and sustain an article of uniform grade and standard—in other words, crop involving quality extrinsic to the plant itself, and previously (in the days when it was produced under conditions suitable for this crop) produced on plantation scale—has been handed over to the next stage (cultivation on small holding) without the introduction of those conditions so vital to the production of an exportable article.

Small output of any such crops, in wildly scattered areas, resulting in the production of small lots of varying standard, is exactly the reverse of the process so important to a crop of this class.

Put this up against the old large-scale coffee plantation; compare this system with that which obtains in Kenya, Brazil, and Costa Rica and the future of our coffee industry is not hard to visualise.

So then, we must recognise that there are certain crops, (Coffee is an outstanding instance, Orchard crops, such as citrus on a large scale,

another) which unless the limitations placed upon the small holder are met, they cannot and will not make a success of them as an exportable article.

The question of how these limitations can be circumvented is a big matter for us to tackle, and a bigger one for discussion here. But it is well to remember that one way is the continuous imposition of more and

More Legislation

for proper control, necessitating more and more Agricultural Laws and restrictions, about which we hear so much resentment these days. This phase I shall discuss later, but let us remember that Orders making for control of crops and limitation of participation of the smaller holder in various schemes, are framed with a view to the best interests of the development of this phase of agricultural effort along orderly and progressive lines and deserve sympathy and support in every respect.

At this stage of our agricultural development there are some crops which the small holder simply cannot make a success of. We must recognise his difficulties and endeavour not to let him in for a lot of heart-burning and disappointment.

Plantation crops on small holding is a blunder, unless the further condition essential to their proper preparation and control have been met. Finance is one big factor.

The suggestion is not that the crop is beyond the reach of the small holder permanently, but that until the limitations are met success will not ensue. The line of action indicated is obvious.

The Trend of the Times.

Let us see for a moment how progress in things as such has affected agriculture as practised by small holders. Under this head we have

i. Motor transportation—the truck.

ii. Roads.

The influence of No. ii., Roads, on No. i., truck transportation, is well recognised. It is well known how extension of road construction policy has put the truck at the door of the cultivator, and brief reference has been made to its effect on animals on holdings, which is a serious aspect of this question; but when due consideration is given to the expedition with which produce may now be brought to buying centres, how markets are brought within easy range, and how produce may now be transported in better condition, we cannot deny the truck a great place in this big change.

Further, small holders are now able to travel long distances to observe agricultural experimental and demonstrational undertakings and are thus now brought into closer touch with things, and the old idea which obtained with regard to the uselessness of demonstration plots as a means whereby to influence small holder cultivation, appears to be completely reversed. Parties involving hundreds of persons visited Grove Place last year (not including smaller parties) and everywhere there is strong evidence of the effect of these visits.

Here, then, is a great change due to the progress of the times. Just how far we are preparing ourselves to take advantage of this change, I leave to your own conjecture.

Personal Responsibility.

There should be small necessity to emphasise our personal responsibilities to this new situation. They are large, important, and varied, and in the stress of attention to the multifarious duties which make up our daily round, we should not lose sight of the bigger issues.

Reference has been made to conditions which are urgent in a crop where quality was intrinsic to the plant, and the first test here is that of yield, though that is not a final test, for yield may be bought at too great a price. Another test is maintenance of purity of the plant based on such a thing as an organised seed supply.

Only recently I observed that:

"A" residing in St. Ann, despite good weather and advantages of soil, was struggling with a most unsatisfactory corn crop, which was of poor growth and rapidly going down to serious mosaic; while "B," residing in St. Elizabeth, under obviously difficult conditions was not only producing corn of superior quality—purity of grain, 24 rows to the ear, and over-sized grains, but had won the 1st Prize from all-comers at a recent Show.

"B" has for a long time been well-known as a person who stocks excellent seed corn and pays great personal attention to this matter.

This case can be made to apply almost generally, speaking geographically, and to almost most crops.

The organisation of a proper seed supply is one condition most essential to crops with quality intrinsic to the plant, and much has been done by the Jamaica Agricultural Society, so far as the provision of a seed supply goes. Personal responsibility is involved in placing the available supply within the reach and use of the small holder.

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Keeping Abreast.

Another obvious personal responsibility in this stage of the evolution of a new form of small holding agriculture is the natural question of keeping ourselves abreast of agricultural progress so that the results of agricultural research work may be passed on.

Most of those who are in personal contact with, and control of detailed operation are too busy with bread and butter problems to undertake this research work, and in fact, speaking squarely, are ill-equipped so to do; but every opportunity should be sought to keep up with this work.

As an instance, reference has been made to the cultivation of guinea grass on the plains of St. Elizabeth. Recently the result of "Studies in Tropical Grasses" has been published by Turner. The results of work covering a number of years show that influenced by the stage of first cutting, and the height of second and subsequent active cuttings, i.e., shaving or cutting 6 to 9 inches from the root and the manner of cutting, this type of grass may be made to produce much greater outcrop of green material, and further, that the rate of recovery is dependent on a number of factors such as time of cutting and repetition of cutting. All this, apart from the question of its use, from a point of view of its value when used as fodder.

These facts passed on to small holders in St. Elizabeth would find most favourable reaction on his agricultural technique. The point needs no labouring but as likely as not, this needs stressing, that in the changing scheme of things, new and ever-widening possibilities keep unfolding themselves, and we cannot content ourselves with remaining steeped in traditional technique which has passed with a passing form of agricultural enterprise.

Position Reviewed.

In review, then, we say that:

i. Jamaica is and will definitely remain Agricultural, and the majority of people will depend upon Agriculture for their prosperity.

ii. Agricultural production must be considered with land tenure and must take into consideration those fundamental requirements which arise from the fact that such production is the consequence of vital activities of plants and animals.

iii. We should recognise that these activities impose definite limits to the conditions, and that it is fatal to exceed these limits.

Thus, it is not merely necessary, as is popularly believed, to bring human beings and land into association, but that these human beings must have knowledge of the limitations imposed upon them, and a capacity to fulfil and keep within those limitations, and that in the case of the small holder he must have capital and other means of providing environment.

iv. That the small holder cannot advance far along the path of civilisation if he lives as a self-contained unit—thus the production of an exportable surplus is imperative.

The demand for this surplus exists, but the mere production of a surplus is not the single object but that it must be an *exportable* surplus the surplus must be placed on the market in regulated supply, in acceptable condition, because graded and regulated production of this exportable surplus is the basis of the progress of the small holder.

SUMMARY GIVEN.

And summarising we say:

i. That from the point of view of the small holder the Island has passed through various phases of agricultural effort, each leaving a legacy of evils in technique and otherwise.

ii. That the early methods of cultivation and occupation of land met the primary needs of the cultivator and non-agrarian population, but that real progress is rooted in providing an exportable surplus and the production of this exportable surplus depends on security of tenure.

iii. That although this last condition—security of tenure—is being met, we seem still to be saddled with handicaps handed down from former stages.

iv. That having regard to the limitation set by crops having quality extrinsic to the plant, those crops which were suited to plantation methods, and grown as such, have not met with success as small holders' crops.

This brings up the question as to whether our methods of Agricultural Education suited to stages i. and ii. do not require overhauling so as to secure results under stage 3, and if this is so, how best may this be done.

A discussion on this point would embrace the following:

1. Adequate staff (from numerical and qualification points of view) which in turn involves finance.
2. Financial arrangement for the small holder—i.e., how far is he making full use of the means at his disposal—Loan Banks, etc.

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QUESTION OF CONTROL.

3. How far should methods of instruction and policy omit detail as to yield and culture and pass on to try to secure a condition suitable for the production of an exportable surplus.
(b) Control (by Laws, etc.,) of orderliness in this export.

(With regard to this last:
i. How far have we progressed along these lines?
ii. How far is the small holder prepared to submit to control.
iii. And to pay for it).

A brief note on 3 (1) "How far have we progressed in this third stage" should be considered along with the fact that (a) an attempt to market the exportable surplus in Bananas (quality intrinsic to the plant) has met with success: but, attempt to market along similar lines (exportable crops with limitation Number two) have not met with success, e.g., Coffee, Citrus, Edible Oils.

(b) That due to the instability of crops under Class I, urgent development of crops under Class II is vital.
(c) That therefore work along lines to improve matters in this respect is indicated, i.e., A change from grindstone methods to induce yield purely as such, to the broader policy of surplus standardised crops well prepared.
(d) That such efforts as Vegetable growing and marketing is worth more (educationally) than present returns suggest.
(e) That to achieve this great object—exportable surplus, etc., control is imperative—hence multiplication of Laws and Orders in Privy Council, and that cheerful acceptance and observation of them is as important as the production of the crop, and that as time goes on, we must expect more and more Orders and tighter and tighter control.

I have endeavoured to stress this

BUSINESS OF EXPORTS

with its possible reaction on the general well-being of the Colony.

The key thought on this matter is that in times of stress the small holder can revert to the simple life, but this entirely disregards the well-being of the non-agrarian section of the population.

I have tried to put before you the broader aspects of this most important phase of our development—Agriculture on Small Holdings—and to give you as wide a view as possible of its aim and ultimate effect in the scheme of things in order to provoke you to thought.

This paper assumes that all small holders come under the influence of our Agricultural Educational system, whereas in fact only a small number of them do. If we are to progress, this condition cannot remain unremedied for long, and since service is limited by finance and it is therefore physically impossible to overtake detailed instructions with regard to yield and culture to everyone, the question to consider is whether we would secure better results by omitting details and proceed along broader outlines so as to serve all small holders.

Finally, emphasis must be laid on the fact that mention in this paper of systems has no reference whatever to Agricultural Instruction as

supplied by any organisation, or as carried out by those employed to them, for no one knows more than I do how arduous are the duties of those saddled with the responsibility of the Agricultural Education of the small holder—more genuine tribute is due to those individuals who so cheerfully, under exacting conditions bear the heat and burden of the day, literally and figuratively—but rather is the reference made to the broad policy of method.

OFFICE CORRESPONDENCE.

Sometimes our correspondents experience some delay in having the matters they write about dealt with promptly. The object of this paragraph is to bring to their attention that when several subjects are written about in the same letter, the letter has to be referred from one department to another and each matter dealt with in turn,—whilst if each letter dealt with one subject only, the various departments in this Office would have the opportunity of dealing with all the matters simultaneously. We dislike delays in any matter in which our correspondents are concerned, and it is in their own interests and our convenience if their letters to us would deal with the fewest subjects possible. If there are many subjects to deal with, write us separate letters on each. They can all be enclosed in the same envelope.

ED.

* * *

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(*Extract from Bulletin of the Imperial Institute, Vol.* XXXIV, *No.* 4.)

STORAGE OF NATIVE FOODSTUFFS IN THE TROPICS.

The following notes regarding methods of storing the commoner native foodstuffs were compiled in connection with an enquiry received recently at the Imperial Institute from the Director of Agriculture, Tanganyika Territory, and are now published for general information.

Maize and other Cereals.—For the safe storage of maize in bulk it is essential that the grain be thoroughly dried in order to prevent heating and mould, and that the moisture content be less than 14 per cent. In addition, precautionary measures must be taken to discourage insect pests, of which the most destructive is the rice weevil (*Calandra oryzæ*). Grain containing more than 20 per cent. of moisture will not only begin to heat, but is particularly favourable for the development of weevils, the optimum moisture point for which is between 17 and 20 per cent. Weevils are unable to live in dry grain containing less than 8 per cent. of moisture, and are unable to carry on active life in the absence of air, and these conditions must be aimed at as far as possible in storing the grain.

Various methods of storing maize are used in tropical, sub-tropical, and other countries. The method adopted by the natives in various parts of Africa, of storing corn on the cob and in the unhusked condition, either in small, especially erected buildings on their farms, or on shelves or racks in their houses, or hung up in various ways, may be satisfactory for small quantities of maize to be kept for short periods, more especially in the case of the hard and flinty varieties, but such methods are not suitable for storing grain in bulk for any length of time.

On the Gold Coast maize has been successfully stored in air-tight petrol or kerosene tins. Corn so stored showed no appreciable loss of weight and proved to be free from weevil attack after a period of eight months, whereas well-sheathed corn stored in a native barn showed a decrease of 25 per cent. in weight and was of less attractive appearance.

Grain in bulk is generally stored in tanks or buildings specially constructed for the purpose, such as silos, galvanised iron sheds, or elevators.

Three methods for ensuring the successful storage of maize in sealed air-tight tanks may be briefly described as follows: (*a*) The tank is rammed completely full of maize before sealing, the metabolic process going on in the grain being apparently sufficient to exhaust the remaining oxygen and to fill the tank with carbon dioxide. (*b*) Lighting a candle in a nearly filled tank and then sealing; this exhausts the oxygen and fills the tank mainly with carbon dioxide. (*c*) Fumigation of the maize in the tank with carbon bisulphide or carbon dioxide gas and sealing down quickly. It is stated that maize can be successfully stored by these methods without danger of heating. It is important, of course, that the corn be thoroughly air-dry before being put into the tank, and also that the tank itself is dry; this can be achieved by lowering a can containing hot coals into it before putting in the maize.

Corrugated galvanised iron containers are the most efficient and economical type of tank for the storage of maize. Such tanks can be constructed in sections, the sides being riveted and soldered at the joints and the lower end of each section of the tank should overlap the section below in order to keep out moisture. The lower sections should also be of a stronger gauge than the upper in order to withstand the greater pressure. The tank itself should rest on a concrete or wooden platform and supports should be placed round it to hold it against the

wind when empty. For filling the tank a scaffolding bearing a small platform is necessary; the opening at the top of the tank can be sealed by means of a flanged lid, the flange of which fits between two circular collars, the inner one of which is higher than the outer, into which space oil is filled, thus making the tank air-tight. A lower opening is also desirable for fumigating purposes. If found necessary to fumigate maize for the prevention of weevil, 1½ to 3 lb. of carbon bisulphide for every 100 bushels of grain, according to tightness of packing of the grain may be used. This can be poured into saucers or on to cotton waste placed in dishes put on top of the grain to be treated. The tank should remain air-tight for a period of twenty-four hours after which the fumes must be allowed to escape by openings at the top and bottom, care being observed not to smoke or place a light near the fumes. Fumigation with carbon bisulphide does not injure the grain for food, and the disagreeable odour passes off on exposure to the air.

In South Africa grain is usually stored in bulk or in sacks, either in tanks, rooms, lofts, or elevators, while for co-operative purposes large sheds made of galvanised iron are used in the corn-growing areas. In Rhodesia a simple and effective way of storing mealies is stated to be in a square brick building with a granite floor and a trap door at the top of one wall for pouring in the mealies; a hole 2 ft. long by 1 ft. high at the bottom of one wall, leads into a trough, which has a hinged door on the top which can be locked.

When sheds are used for the storage of maize in sacks they should be so constructed as to admit the maximum amount of air and light. This is particularly necessary in humid climates. If weather conditions permit the sides may be constructed of thick mesh wire netting, while the roof should project sufficiently to prevent beating by the rain. Should weather conditions make wire-netting sides impracticable, walls having large doors and ample window space fitted with movable wire-netting frames should be provided. Cement, concrete, or tight wooden floors are desirable as they can be cleaned easily. When storing grain in sacks it is important to prevent them coming into contact with the floor. This can be achieved by stacking in rows, on poles, rafters or beam, running parallel with the shed, in such a way as to allow space for inspection, and circulation of air to ensure dry grain and prevent overheating.

Fumigation may be carried out in the shed by placing each sack on a tarpaulin and treating with 2 oz. of carbon bisulphide, the liquid being thrown on to each sack in order that it runs through on to the grain. The bags are then covered by folding over the tarpaulin and left for 72 hours.

When grain stored in bulk requires fumigation, 5 pints of carbon bisulphide per 1,000 cu. ft. of air space, including the space occupied by the grain, should be distributed on the surface and at depths of 5 ft. Fumigation should not be carried out when the temperature is below 70 degrees F.

In the United States of America seed-corn curing and storing houses are used for maize storing; these are so constructed as to provide free ventilation and artificial heat when necessary, also protection from insects and rodents, and weather damages. Such houses are built on high and narrow lines, having two or three stories as the warm air rises more effectively in such buildings. The air may be heated to a temperature of 109 degrees F., though temperatures ranging from 80 degrees to 100 degrees are generally effective, and the heat should be maintained to keep the corn to a moisture content of 14 per cent. or less.

Rice and wheat require similar precautions as regards moisture and protection from weevil as maize, but the moisture content of the rice before storage should be lower, viz., 12 per cent. or less.

In India wheat has been successfully stored by putting it into open-mouthed receptacles and covering the grain with a layer of sand. A sheet of cloth, wood, or iron may be placed in between to prevent the grain becoming mixed with the sand.

Beans.—In storing beans for food, artificial heat may be used for drying; as in the case of maize, the seeds should be thoroughly cured to reduce moisture content, as undue moisture leads to moulds and heating may result. Good ventilation in the store is essential, and providing the moisture is kept at a minimum, the temperature factor is not so important. The bean weevil, which is the chief pest of stored beans, begins life in the field and breeds in dry seeds, consequently treatment should be resorted to as soon as the seeds are ready for storage. Heat and fumigation are the best remedies. Weevil-infested seeds may be poured into boiling water which is drained off at once, followed by a thorough drying before storing. An alternative method is to heat the seeds to a temperature of 145 degrees F. or higher. Fumigating with carbon bisulphide is one of the best methods of treating infested seeds. The seeds should be placed in an air-tight room or tank and treated with 1 oz. of carbon bisulphide for every 100 lb. seed for 48 hours. When applied at a temperature of below 60 degrees F. the amount of carbon bisulphide used should be increased. The liquid may be sprinkled over the surface of the pile without injury to the seeds. After treatment the seeds should be exposed so that the fumes will be liberated.

Ground-nuts.—These can be stored for long periods if kept in the

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undecorticated condition, but they soon deteriorate after shelling. When storing ground-nuts, precautions should be taken against rats and mice and the store should be well ventilated and dry. Ground-nuts are usually stored in sacks, or cribs, similar to those employed for the storage of corn.

Yams.—The most satisfactory manner of storing yams is by arranging them in layers, three or four deep on shelves, in well ventilated rooms. The tubers should be mature before harvesting, and care should be observed during lifting operations and storage to avoid damage by bruising. Bruised tubers are liable to fungoid attack and should be treated with Bordeaux Mixture or slaked lime to prevent spread of infection. In the West Indies the yam scale is sometimes a serious pest as it continues breeding on stored roots and causes them to shrivel. In various parts of Africa the Dynastid Beetle (*Heteroligus claudius*) is one of the troublesome pests of the yam crop. Yams may also be stored in small heaps in well ventilated rooms protected from rats and mice, or in pits, though this method cannot be recommended unless the soil is thoroughly dry and likely to remain so. In West Africa the natives in certain areas store their yams in a specially constructed "yam house." These "buildings," which are of a temporary nature, are made from materials obtained in the locality and consist of a number of posts arranged a small distance apart in the form of a square or oblong on which the yams are tied; sometimes the "buildings" have a roof of light thatch or palm leaves to protect the yams from the sun, and if on a large scale, additional racks running down the centre.

Under all conditions of storage yams require regular inspection to remove diseased tubers, otherwise infection will spread rapidly, resulting in considerable loss.

Cassava.—Cassava tubers do not store well for any length of time after removal from the ground and exposure to the air. Cassava "chips," however, can be kept for a long period. The preparation of cassava chips consists of peeling and slicing the roots (or splitting and cutting into pieces a few inches long and an inch or less thick) followed by drying in the sun until very crisp. When the chips are required for use they may be pounded and sieved in order to separate the fibre from the flour.

Sweet Potato.—In storing the sweet potato similar precautions to those required for the storage of yams should be observed. The sweet potato has a thin delicate skin and is therefore particularly liable to injury, consequently, when lifting, great care should be taken to avoid cutting or bruising which lead to decay. The loss from carefully handled sweet potatoes may amount to as much as one-sixth less than that from others less carefully handled. Though sweet potatoes may be left in the ground for varying periods after maturity, such practice is undesirable as sprouting and decay tend to take place. In Trinidad various methods of storage have been attempted experimentally. These consisted of storing in clamps or pits (with or without ventilation), and in layers of sand, in bags, and in a well-ventilated store, in heaps, piled on sacking, and on shelves in layers 3 or 4 in. deep. Of these methods the most satisfactory appears to be storage in pits (either ventilated or unventilated)—decay being almost negligible and loss due to shrinkage low. The tubers stored in bags showed less decay but considerable shrinkage. Decay was not marked in the case of the tubers stored in the heap, but the loss through shrinkage however was high.

In the United States of America considerable attention has been given to the question of storage of the sweet potato on account of the

great losses occasioned by market gluts shortly after harvesting the crop. Specially built sweet potato storage houses built of wood, brick, hollow tile, cement, or stone are used for the purpose. After harvesting, the crop is conveyed to the store where it undergoes a curing process in order to heal wounds sustained during lifting. This consists of maintaining a temperature in the store of 80 degrees F. to 85 degrees F. with a relative humidity of 90 per cent. and sufficient ventilation to prevent condensation of moisture for a period of ten days to two weeks. When the curing period is over the temperature of the storage house is reduced to as near 55 degrees F. as possible, and maintained as near as possible at this figure and at a relative humidity of 85 to 90 per cent. throughout the storage period. Such high humidities tend to check shrivelling and internal breakdown, and thus protect roots against infection.

Literature.—The following are some of the more important publications used in compiling the foregoing notes, from which further details may be obtained.

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"The Storage of Padi in Kedah." By W. N. SANDS. *The Malayan Agricultural Journal*, 21, 1933, pp. 678-681. (Kuala Lumpur : Department of Agriculture.)

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"Sweet Potato Storage Trials." By J. G. BRASH. *Tropical Agriculture*, 8, No. 7, July, 1931, pp. 185-187. (Obtainable from the Imperial College of Tropical Agriculture, Trinidad, or the Secretary of the College, 14 Trinity Square, London, E.C.3.)

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THE CONTROL OF INSECT PESTS BY MEANS OF INSECTICIDES.

(By W. H. Edwards, D.I.C., F.E.S., Government Entomologist, Jamaica.)

(*Continued from the Nov.-Dec., 1936 Journal.*)

Beetroots.

Numerous small holes eaten through the blades of the leaves which in severe cases, become skeletonized. Such damage is frequently done by small green beetles which are very active.

Spray with arsenicals such as Lead Arsenate (see p. 353 of the June-July Journal).

Or better with Lead Arsenate-Bordeaux Mixture (see p. 596 of the October Journal).

Cabbage, Brussels Sprouts and other Vegetables Botanically Related.

Leaves covered with Plant Lice, i.e., minute insects which suck the sap and prevent the plants from developing normally.

Control: Sprays with Whale Oil Soap-Nicotine Sulphate. See p. 434 of the August, 1936 Journal.

Holes eaten through the leaves by caterpillars. There are two species of these, a small one and another which attains a length of 1¼ inches.

The same insecticides should be used against both.

When plants are young spray with Lead Arsenate. See p. 353 of the June-July, 1936 Journal. Or with Synthetic Cryolite, see p. 354 of the June-July, 1936 Journal.

As the use of poisons would be dangerous after the plants begin to head, plants which are well developed can only be sprayed with an insecticide which is not poisonous to human beings; then use Whale Oil Soap-Nicotine extract as described on p. 434 of the August Journal.

When the crops have been reaped always destroy the plants by feeding them to rabbits or cattle as otherwise insect pests breed on the stumps and leaves left in the fields and infest succeeding crops.

Cannas.

Leaves partially eaten: Caterpillars which fold the edges of the leaves.

Spray with Lead Arsenate. See p. 353 of the June-July, 1936 Journal.

When the caterpillars are few in numbers they can be destroyed by pressing the folded leaves between the fingers.

Coconut.

Apply for copy of the Departmental Publication "The Health of Coconuts in Jamaica."



Fig. 5—Cabbage Leaves eaten through by the Caterpillars

CORN.

Leaves eaten by caterpillars which when the ears develop also eat out the tassels and grains:—Dust or Spray with Lead Arsenate. See p. 353 of the June-July Journal.

Leaves infected by Plant Lice: If the infestation is very severe spray the leaves of the funnel of the plants with Whale Oil-Soap-Nicotine Sulphate solution. See p. 434 of the August, 1936 Journal.

As a rule these plant lice are ultimately controlled by natural enemies.

CITRUS.

The *bark of young trees chewed by Ants.*

Destroy all formicaries by using Jeyes Kerosene Emulsion, see p. 431 of the August Journal. Dress the wounds with Bordeaux Paint. See p 595 of the October Journal.

Localized infestation of younger *leaves and branches by Green Scales*: Atomize Pyrethrum-Kerosene p. 513 of the September Journal, on infested parts and destroy attending ants by treating the nest with Cyanogas when on the branches, see p. 517 of the September Journal, or with Jeyes-Kerosene Emulsion when they nest in the soil.

Leaves and young twigs infested by Armoured Scales:

Spray with a Miscible Oil. See p. 432 of the August Journal, or with home-made Kerosene Emulsion, see p. 431 of the August Journal, or with Lime Sulphur, see p. 355 of the June-July Journal, which will check pathogenic fungi including the brown entomophagous fungi which does more harm than good in humid areas, on account of the excessive growth around branches.

When the plants are small they can be fumigated under rigid covers.

Insects attacking the Leaves.

(a) Caterpillars: Spray with Lead Arsenate. See p. 353 of the June-July Journal.

(b) Fiddler Beetles: Collect and destroy the weevils and spray the leaves with Lead Arsenate. See p. 353 of the June-July Journal.
(c) Slugs and Snails: See Journal of Jamaica Agricultural Society, Vol. 38, page 759.

Young shoots infested by Aphids which cause curling and deformation of tender growth: Spray with Whale Oil soap and Nicotine Sulphate. See p. 434 of the August Journal.

Fruits: Mixed infestation with *Scale Insects* and Rust Mites or Thrips: Spray with Lime Sulphur. See p. 355 of the June-July Journal. This will also check pathogenic fungi.

Roots Girdled by Coleopterous grubs.

(a) Collect and destroy the adults which are beetles which feed on the leaves. See above under "Insects Eating the Leaves."
(b) Dig around the roots and destroy all grubs found.
(c) Apply Paradichlorbenzene or Seekay as a deterrent. See Journal of Jamaica Agricultural Society, Vol. 38, page 678.

Bark of Stem and Branches covered by Scale Insects:—

This pest is the Orange Snow Scale; *Chionaspis citri*, Comst., a white coat formed by the minute scale of the male insects lying side by side. Under ordinary conditions this scale is not a very serious pest of orange and grapefruit but in dry situations or when the plants suffer from root troubles it infests them, limes especially, very seriously.

Paint with a paint brush all over the infested bark, Jeyes-Kerosene emulsion 1 part in 9 parts of water. Repeat the treatment at fortnightly intervals until the pest has disappeared and then white-wash the trunk.

COFFEE.

Young twigs and leaves infested by the Green Scale.

When infestation is localized or immediately after the pruning season, treat with Pyrethrum-Kerosene as explained on page 513 of the September Journal.

Borer Girdling the stem.

Introduce about half a teaspoonful of Paradichlorbenzene in the tunnels and close the aperture with a pellet of clay so that the gas evolved will remain inside the tunnels and suffocate the insect.

N.B.—These insects can also be destroyed by poking a wire into the tunnel until it wounds the insect living inside.

Slugs and Snails: See the Journal of Jamaica Agricultural Society, Vol. 38, page 759.

CUCUMBERS, MELONS AND PUMPKINS.

Young leaves curled and dwarfed on closer examination found covered by minute plant lice.

Spray with Nicotine Sulphate and Soap or with Whale Oil Soap or with the insecticide mentioned hereunder for caterpillars.

Before spraying, shake the plants lightly so that the Lady Beetles, which feed on aphids and are always present when an infestation occurs, would fall on the ground or fly away and thereby escape destruction when the plants are sprayed.

Leaves eaten by caterpillars found on the underside of the leaves.

The best insecticide to control these insects which, when left uncontrolled, defoliate the plants rapidly, is Fish Oil-Cryolite Mixture mentioned on page 354 of the June-July Journal; the underside of the leaves

and young shoots should be sprayed very thoroughly. Use an angle nozzle.

EGGPLANT.

Seedlings attacked by young Cutworms: Water the beds with Cheshunt Mixture. See p. 595 of the October Journal.

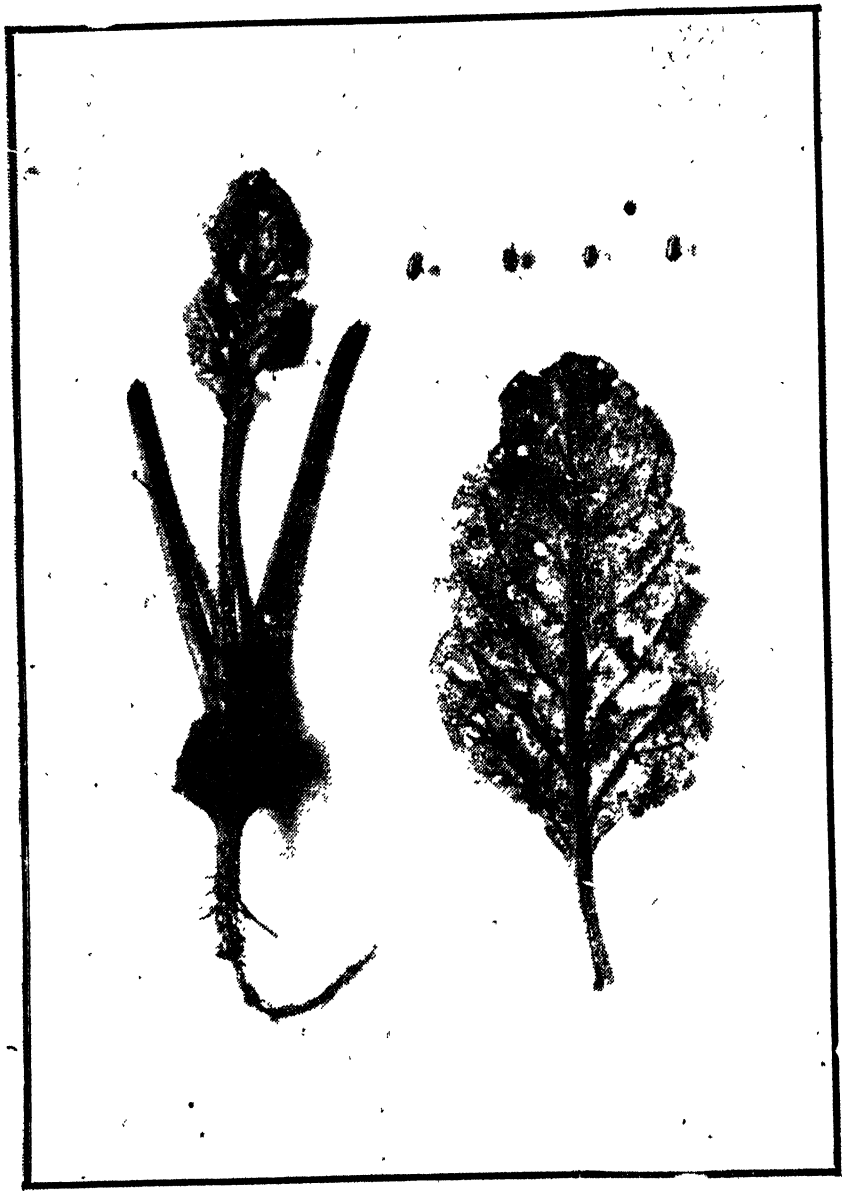


Fig. 4.—Beetroot attacked by Flea Beetles.

Older plants attacked by Cutworms.

Leaves perforated with minute holes made by small brown beetles which look like, and are as active as, fleas. If neglected, the lesions become so numerous that the development of the plant is arrested.

As soon as these insects begin to attack the plants, spray at weekly intervals or more often, if the insecticide is washed by rain, with Bordeaux-Lead Arsenate. See p. 596 of the October Journal.

Leaves discoloured in blotches by small insects which have transparent lace-like wings and which congregate on the underside.

Cut off and burn all heavily infested leaves and spray the plants with Nicotine Sulphate-Whale Oil Soap. See p. 434 of the August Journal.

Stems, branches and sometimes the fruits are infested by *scale insects* which appear like small oval black pads on the epidermis.

Spray regularly with Whale Oil Soap-Nicotine Sulphate. See p. 434 of the August Journal; or with an Oil emulsion applied on the infested parts. Destroy simultaneously the attending ants with Jeyes-Kerosene emulsion.

(To be Continued.)

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TOBACCO CIRCULAR No. 4. 1*st January*, 1937.

(By F. W. WINCKLEY, Tobacco Specialist).

TOBACCO CURING.

Curing.—After the plants have been cut and hung up in pairs on the rails to dry, one must wait from 35 to 50 days before the leaves and their stems are perfectly dry. This time for drying differs greatly, as all depends on the weather. If the weather is cold and damp, it is best to keep charcoal fires burning between the several rooms in the barn to keep the air circulating as much as possible. A damp clammy atmosphere in a barn will cause the tobacco to sweat, so great care must be taken to prevent this taking place, as once 'sweating' starts it is difficult to prevent it from going through the whole barn and so spoiling the tobacco If one has sunny days it is best to hang the affected rails out in the sun for a few hours to check the sweating. During the day, on fine days the barn should be open to air as much as possible, so that it is best to have shutters made at either end of the barn to allow of them being opened and ensuring a good current of air going through the barn. After cutting the green tobacco and hanging it on the rails, it is sometimes worth while putting the rails outside in the sun for a short time or in a place out in the open with not too much sun for a couple of days to allow the plants to quail properly and also to prevent sweating and hasten on the drying process. The rails should not be left out in rain. The idea is to get the plants as free from moisture as possible before hanging up in the barn, thus keeping the interior of the barn at the same time as free from moisture as possible.

When the tobacco leaves are quite dry and their stems are dry right up to where they join the main plant stalk, one can start stripping The early morning is the right time to start taking the pairs of plants from the rails. About 24 pairs to a rail of 12 feet long is usual, so when taking down, string up 12 pairs together, lift off the rail, and place in a cool spot on the floor of the 'press' or place where the fermenting is to take place, and cover over with sacking or banana matting. That is, from each rail make two big bundles of plants. When the necessary quantity has been taken down, start making a "stick press," that is, the bundles of plants with their dried leaves still hanging to them are placed in a staple with their heads or tops towards the centre and the stalk end, by which they have been hanging, outwards. This ensures that all the leaves are inside the staple or press, and as they have been taken down in the early morning they are supple and will remain so until the stripping begins. Do not keep the plants in this press more than a night or two, but start stripping as soon as possible, as fermentation will start and it is better not to ferment the tobacco, while the plant stalks are still green, otherwise the leaves soak up so much moisture that it is difficult to get them dry again. When the leaves are stripped, it is better to grade for length at once, if possible, and then make them into heads of from 40 to 45 leaves. These heads should be kept covered as much as possible to keep them supple, otherwise they will dry out, and be difficult to ferment properly. When a good quantity of heads is ready, they should be stapled together in a pile

(pilon) of from 5 ft. by 5 ft. to 9 ft. by 9 ft. and 5 ft. high. The size of pilon depends on the quantity naturally. When about 3 ft. high a hollow bamboo, large enough to allow a thermometer to pass easily down its centre, should be placed on the layer of tobacco in the pilon. One end of the bamboo is in the middle of the pilon, and the other end sticks out 6 ins. from the side of the pilon. A straight bamboo of about 1½ inches diameter should be used and the partitions between the hollow joints should be cut out with a chisel. To do this a small opening about 3 inches long and ¾ in. wide must be made at one side of the bamboo. These openings are also necessary to allow the heat from the tobacco to reach the thermometer, which must be put down the bamboo to the centre of the pilon. It is best to tie the thermometer to a strip of bamboo, which can easily be pulled up or pushed down the hollow bamboo. The bulb end of thermometer must be nearest the centre of pilon. Now go on with stapling the tobacco on top of the bamboo until the required height of 5 ft. is reached. Then insert thermometer, and cover the pilon with sacking or matting. The fermentation will start almost the first day, and every morning the thermometer must be read and a note kept of the reading. The fermentation can go on until a temperature of 130 F. has been reached, but it must not be allowed to go higher, so if one sees that it is likely to go higher in the night, the pilon must be opened up that day and turned. All the tobacco forming the sides of the pilon, two or three layers from the top and bottom, have not had any heat, so this tobacco must be put aside and later on when rebuilding the staple or pilon, it must be put in the middle, to be sure that it gets its fair share of fermentation. Turning a pilon must be done as quickly as possible so that as little heat as possible is lost. Pilons should be built on plank floors, so it is best to have one compart-

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ment in the barn with a wooden floor raised at least 6 ins. from the ground, and also the sides should be of boards or wattle plastered with mud. The method of stapling or stacking the heads of tobacco leaves is quite simple. First start a row outside completing the full size of the pilon, then about 3 ins. inside this row start another row, the heads always being outwards and the tips of the leaves inwards. When these two outside rows are completed, start stapling across with the heads pointing outwards and go on doing this making the straight rows about 3 ins. apart until the centre of the pilon is reached. Then start at the other side doing the same thing until the whole of the first layer is complete. Start the second and succeeding layers the same way and the cross rows as well, so that the pilon is composed of so many layers of tobacco, built up to 5 ft. high.

Barns or Tobacco Houses.—These should be built of hard wood posts with wattled sides and thatched roofs. All interior wood not coming in contact with the ground may be of softer woods, though the cross-pieces, on which the bars or rails are to rest, must be strong, as the weight of the green plants is fairly heavy.

It has always been said that one room per acre is sufficient, but with more modern methods of cultivation and consequently better sized plants it is safer to have two rooms to the acre, and so have plenty of room to space the rails properly and dry the tobacco more quickly. The size of a barn for 1 acre should be then 33 ft. by 27 ft. by 24 ft. high at ridge pole, and 9 ft. high to plate (i.e. outside posts). The length of 33 ft. is made up as follows:

3 ft , 12 ft . 3 ft., 12 ft., 3 ft. The 3 ft. spaces are walk ways to enable one to move freely between the rooms when moving the rails. The 12 ft. spaces are the rooms, where the tobacco is to hang. In breadth the rooms are 27 ft. with a centre walk way of 3 ft. On every row of posts across the breadth of the barn crosspieces must be put up at 3 ft. intervals, on which the bamboo rails are to hang. The ends of the barns may be thatched to within 6 ft. of the ground, that is as far as the wattling, and two or three shutters should be made in this side thatching, which can easily be opened or closed as required. For each room 125 to 130 bamboo rails are required, so for 1 acre 300 bamboo rails are more than enough. The extra rails are always handy in case of breakages, also if the crop is extra large. With large sized plants it is best to space them at 1 foot intervals on the rails, in this case 125 rails per room are necessary and these will hold 6,000 plants. One corner must be set aside to make the room for a watchman, also the 'press', where the tobacco will be stored for fermentation, as explained previously.

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Cover Crops.

Uganda.—According to the half-yearly report on the Kampala Plantation for January to June, 1936, a considerable number of green manure and other leguminous crops are being grown there. Of these the most useful under conditions at Kampala are velvet bean (*Mucuna pruriens*), sword bean (*Canavalia ensiforme*), pigeon pea (*Cajanus cajan*) and sunn hemp (*Crotalaria juncea*).

The velvet bean grows and spreads rapidly and soon forms a cover over the soil; it is sown on many of the fallow plots.

The sword bean, with its erect, non-climbing habit, is used for interplanting among coffee as well as for covering fallow ground: it has the further advantage that it grows quite well under shade.

The pigeon pea is useful as a long term cover crop; the form that is grown at Kampala will last two years at least.

The sunn hemp is a short period crop, germinating rapidly and, when sown densely, it will provide a large bulk of material within a few months.

Species of *Phaseolus* (*P. calcaratus* and some forms of *P. lunatus*, such as Madagascar butter beans) will form a good cover for a space of one to two years, but their climbing habit makes it necessary for attention to be given frequently if they are interplanted among coffee.

Sesbania aegyptiaca is a tall shrub, attaining a height of 20 feet and with an open habit; it is sometimes used to give temporary shade, for it will last for two years at Kampala: also it will tolerate very swampy conditions, and therefore it is used for planting in some of the wetter parts of the plantation.

Of permanent ground cover crops, those most used are *Leucaena glauca*, which must, however, be cut back periodically, and *Centrosema pubescens*. The latter species has the disadvantage that it cannot compete with the local "Lumbugu" or couch grass (*Digitaria scalarum*) and, in consequence, if a plot has been under *Centrosema pubescens* for some time, a dense growth of "Lumbugu" may have formed. *Centrosema plumieri* shows promise of being a good cover crop, but, unfortunately, it sets very little seed at Kampala.

Coffee

Uganda.—The following information relating to experiments with coffee carried out by the Department of Agriculture at the Kampala Plantation and the Bukalasa Experiment Station is contained in the half-yearly report for January to June, 1936:

Kampala.—The rain, which fell at frequent intervals during December, January and February—months which usually are dry but which this year had a rainfall of 6.97 in., 3.79 in. and 2.59 in. respectively—adversely affected the flowering of Arabica coffee and hardly a single flower opened in the normal manner; only small green star-shaped flowers resulted. With Robusta coffee, on the other hand, although there was no well-marked burst of flowering, yet there have been several small flushes of flowers and a fair quantity of fruit has set.

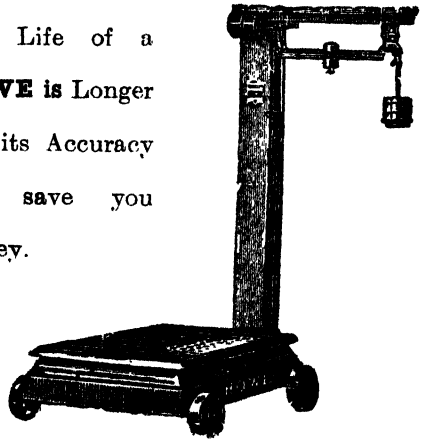
Experiments on the vegetative propagation of coffee have been in progress on the plantation for some years, and it is now possible to make some observations on the results obtained. The first experiments were on the practice of cleft grafting—with scions both of Arabica and Robusta coffee on stocks of Robusta, Liberica and Excelsa seedlings. Clones of selections were planted out in 1932: although they are on some of the best soil that is available, yet their growth has not been so strong as that of seedlings. This weakness has been especially marked in the case of Arabica coffee—none of the trees are really robust, and many have died off suddenly, a phenomenon which would appear to be due to incompatibility of the stock and the scion and the formation of a poor union between the bark of the two species. The Robusta clones are mostly in good condition—only a few individuals have died: it is remarkable how similar the trees in any one clone appear to be, in spite of the diversity of stocks employed.

Experiments also were made with grafting selected Robusta trees on older trees of poor type and the scions made strong growth; but it is now difficult to sucker such plants, for it is hard to tell whether shoots arise from the stock or from the scion—this disadvantage could be overcome by marking the point of union with paint, as is done in the Dutch East Indies.

More recently, trials have been made with cuttings, and a fair amount of success has been obtained in the case of Robusta coffee, using large cuttings, about eighteen inches long, of woody branches; only a few Arabica coffee cuttings of this type have grown. The oldest rooted cuttings were planted out in 1934 and have made quite good growth, although they appear to suffer more from drought than do seedling plants.

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Bukalasa.—In the shade and cover crop experiment there was a general levelling up of yields, and the most significant result was the continued loss in crop due to the use of banana shade with a cover crop.

In the ground treatment experiment, it was found that mulching and clean weeding gave similar yields, both producing very much greater crops than a permanent cover crop and selective weeding. The value of mulch for checking erosion and weeds was very evident. The results are shown in the following table:

YIELDS.

(*Totals of four one-ninth acre plots.*)

	lb. of wet cherry.
Clean Weeding	5,428
Mulching	5,275
Permanent Cover Crop	2,076
Selective Weeding	1,032
Least significant difference	1,109.2

(*Copied from Bulletin of the Imperial Institute, Vol.* XXXIV, *No.* 4.)

AUTHORIZED PERSONS.

Return of Arrests for Quarter ending 31st December, 1936.

St. Thomas	5
Portland	6
St. Mary	32
St. Ann	6
Trelawny	1
St. James	13
Hanover	1
Westmoreland	5
St. Elizabeth	10
Manchester	11
Clarendon	28
St. Catherine	45

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RE RESUCITATION OF PEAS INDUSTRY.

(Copy.)

British Consulate General,
Valparaiso,
August 13th, 1936.

B.S. No. 39,
(1330/34)

Sir,

With reference to your letter of the 15th July, I have to inform you that there is no export bounty or subsidy on beans of any sort. The real cause of the cheapness of Chilean agricultural produce lies in the combination of devaluated exchange and low wages. The former was recently officially lowered from $40 (par) to $96 to the £, but business is carried on with the export rate (some $130 to the £) or the strictly unofficial "kerb" rate of some $145 to the £. Though wages have been slowly rising since the exchange fell, there is no doubt that they are still extremely low and have a long way to go before they come up to the level which would be justified by the devaluated exchange. It cannot be said that the influence of cheap local fertilizer plays any great part in the maintaining of low prices, which are due to the economic situation which has arisen in so many countries since the war of inflated exchange and low wages.

I am, Sir,
Your obedient Servant,
(Sgd.) T. J. ERSKINE HASKOLL,
Acting British Consul General.

A. O. Soutar, Esq., J.P.,
President, Stony Hill Branch,
Jamaica Agricultural Society,
Jamaica, British West Indies.

(Copy.)

British Consulate General,
Valparaiso,
October 19th, 1936.

B.S. No. 45
(1330/34)

Sir,

I beg to acknowledge the receipt of your letter of the 28th ultimo regarding Chilean Beans. The export of these is at present under an embargo by the Chilean Government owing to a shortage of certain foodstuffs in the country. The only exports of these which are per-

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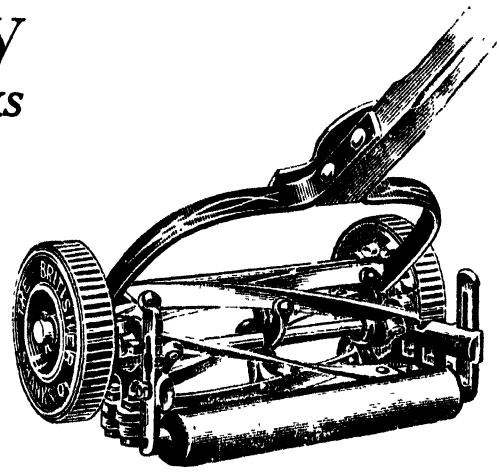
mitted are those which had been already sold abroad when the embargo was put on. I am informed, however, that the rise in prices is rather due to external causes affecting the whole market, that is that Chilean Beans have risen in sympathy with the market owing to the drought and shortage in the United States.

2. The embargo on the part of the Chilean Government refers as yet only to the present crop. It is impossible to state what will be done with regard to the coming crop, and exports will naturally depend on its size.

I am, Sir,
Your obedient Servant,
(Sgd.) T. J. ERSKINE HASKOLL,
Acting British Consul General.

A. O. Soutar, Esq., J.P.,
President, Stony Hill Branch,
Jamaica Agricultural Society,
Jamaica, British West Indies.

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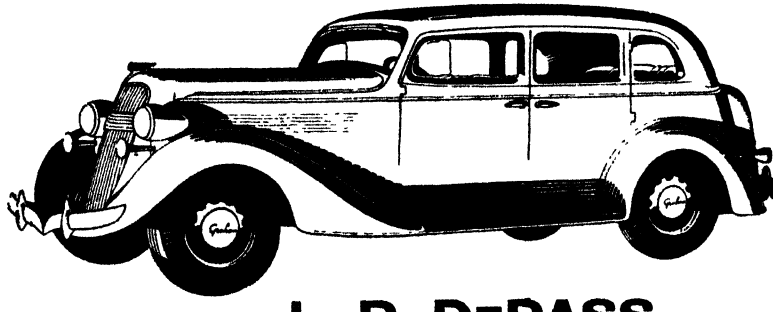
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(REPRODUCTION OF A PAMPHLET OF THE AGRICULTURAL SOCIETY OF TRINIDAD AND TOBAGO.)

AN ACCIDENTAL DISCOVERY RE CASSAVA CULTIVATION.

A Paper read by the Rev. C. D. Lalla at the General Meeting of the Agricultural Society, on 13th February, 1930.

After the sitting of the Wages Commission at Sangre Grande Police Court, on the 14th January, 1920, the present President of the Agricultural Society and I were standing over the window, admiring the healthy condition of the Vegetable Plot adjoining the Court House, and possibly reared by the local constabulary. The topic of discussion was no longer Wages, but hinged around Vegetables, and we readily exchanged our experiences relating thereto. Among the various vegetables discussed were those which are chiefly used on our own tables, and which also formed the main diet of the labouring classes. Sweet Cassava naturally received in turn its fair share of attention.

In this connection, I recounted to him of a two-fold discovery, which I had then recently made in a purely accidental manner, and, on his request, I am now called upon ten years later, to share that experience with a wider constituency. Possibly others here may have had a similar experience, or even one better to relate, and which can only be known by an interchange of views and ideas relative to the subject under review. Our own experience, however, deals with

1. AN IMPROVED METHOD.

During December of 1919, there was a heavy downpour of rain with high winds, which threw down a good many of my melongene trees, that were heavily laden with fruit. As no other stakes were available at the time, and immediate attention to the injured trees was indispensable, if the affected trees were to be saved; we resorted to our Sweet Cassava Plot, and where there were three or four branches on a tree, we removed one for the purpose of providing stakes for the melongenes. The branches thus removed were usually about four to five feet in length. These were pointed at the base and pressed beside the melongenes to a depth that would keep the trees firm when tied to them.

By the following Easter, the melongenes having served their purpose, withered away during the severe drought that followed, but the cassava stakes grew luxuriantly where placed, and were allowed to remain until the downpour of the Easter rains, when their stems would be utilized for replanting. On the approach of the usual Planting Season, we tried to pull out one of these growing cassava stakes for the purpose of preparing the usual tiny plants from it, but found that it required more than the ordinary strength to pull it out. With the help of a fork, however, we were able to uproot the growing stake, but to our utter and agreeable surprise we gathered up a large number of huge tubers, which fully trebled the yield of those dug out from any single hole from the regular Cassava Plot.

Some of our home-folks, who saw the unusual size of the tubers, thought that they would be bitter to the taste. Others again thought that they would hardly boil properly and would therefore be unfit for human consumption. There were others still, who expressed the opinion that these tubers would be far too woody and fibrous, because

they were not grown by the regular method of cultivation. Consequently, with considerable wavering, a supply of these tubers were prepared for meal in the ordinary manner, and, subsequently, found their way on our table. When sampled they did not only prove to be entirely free from the several defects predicted against them, but of all the sweet cassava we had hitherto eaten, these were unquestionably of the very best.

Encouraged by this latest discovery, experiments were made by us during the subsequent year in parallel plots with the regular size plants and the long sticks—the former being planted in the ordinary way and the latter in manured plot, and the result obtained by the New Method fully confirmed the previous experience. Since then we have finally condemned the primitive method of cultivation and adopted the discovered method with equal success. In order to share this knowledge with our friends and neighbours, we laid out a plot of cassava some years ago in a conspicuous locality adjoining our church, which did not only attract much attention, but provoked many uncomplimentary remarks both from friends and neighbours alike. But some months after, when the trees were matured, we took pleasure in inviting about a half-dozen of those who lived around our premises, and who were loudest in their criticism of "the parson's waste of plants," to take home, with our compliments, a root of this very cassava for the use of their family.

While surveying the trees from top to bottom, some shrugged their shoulders, others thought that it was a waste of strength to pull out these cassava sticks, as they had nothing beneath them, and all of my visitors seemed most reluctant—for the first time in my experience—to accept a free gift. With some persuasion, however, one of them volunteered to pull out the first root—remarking at the same time that

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he would do it only for a joke. The first root was at last pulled out of the ground, in the presence of the party, and the extraordinary results obtained was as startling to them as it had been to me originally. After this no further persuasion was required. The others present simply scrambled to pull out their share, and, without further ado, the entire neighbourhood soon adopted the New Method of cultivation with equally gratifying results.

II. An Earlier Method.

During the same year, sweet cassava was occasionally reaped from the regular plot and after removing the tubers, the entire trees were leaned against banana trees, with a few shovels full of earth thrown at their roots, so as to keep the trees alive, and thus conserve our plants for the following season. Ordinarily, after digging cassava, two tiny plants are usually placed in the same hole, from which the parent tree was dug out, and allowed to grow, and the rest of the stems were thrown about the ground. But with the approach of the Dry Season, most of these tiny plants readily die out, and even those that do survive could hardly provide an adequate supply of plants, and the returns obtained therefrom are equally of a poor character—due doubtless to the impoverished condition of the soil in which they were planted. It was in order to guard against this serious handicap under the prevailing system that the uprooted trees were placed against the banana trees, where they readily grew and were even able to withstand the severest drought, which occasionally intervened.

On the approach of the planting season, the best plants were prepared from the melongene stakes already referred to, and when these were exhausted, we resorted to the uprooted cassava trees sprouting beside the banana trees, but on pulling them away from their temporary abode, lo and behold another startling discovery again awaited us. For every cassava tree thus removed from the banana trees another crop of tubers was reaped—and one that easily equalled the yield of those realised from the regular plot, and within six to eight weeks time! Since then this most welcome experience has been frequently repeated in subsequent seasons, and hence those of us who prize sweet cassava as a table delicacy, have no fear to be without it for any length of time owing to the present discovery.

III. Practical Observations.

A few practical observations, in the light of the discoveries made may prove both interesting and helpful. They are as follows:—

(a) The ordinary one-foot plants require from two to three weedings before they can properly develop and mature, but these long plants grow four or five feet overhead, so that no weeds can affect them, and an occasioned cutlassing would be ample.

(b) The ordinary size plants are usually planted with the cutlass or grubbing hoe—two plants to a hole, but the long plants are merely pointed at the base and pressed into the prepared ground—one plant to a hole, and at the same distance from one point to another.

(c) The popular red sticks mature by the ordinary method in about nine to twelve months, but these long sticks yield their tubers in about half that time, viz.: from four and a half to six months.

(d) Except in virgin soil, the ordinary method usually produces a small yield, and tubers of a woody and fibrous character, but the long sticks placed in manured plots, give both quality and quantity.

(e) By a pursuit of the primitive method, cassava can only be available during the dry season, but by a careful regulation of the up-rooted trees, cassava will be available throughout the year.

(f) Cultivation by the popular method occasionally produces a tree without a single tuber beneath it, but the New Method has invariably produced a heavily laden cluster.

(g) All varieties of cassava have responded by yielding a better harvest under the New Method than by the Old Method.

If this two-fold discovery and my practical observations related above, are of some interest to this Society and prove helpful to our struggling peasantry, then the time and labour expended in the preparation of this paper will be amply repaid.

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(*The Jamaica Gazette, January* 21, 1937.)

CATTLE SLAUGHTERED IN DECEMBER, 1936.

Return showing the approximate number of Cattle slaughtered in the several parishes of the Island during December, 1936:—

Parish.	Number of Cattle Slaughtered.
Kingston	888
St. Andrew...	136
St. Thomas...	60
Portland	160
St. Mary	147
St. Ann	218
Trelawny	124
St. James	263
Hanover	145
Westmoreland	237
St. Elizabeth	156
Manchester	264
Clarendon	146
St. Catherine	232
Total	3,176

JAMAICA SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS.

Veterinary Service, St. Ann Branch J.S.P.C.A.

Dates on which the Veterinary Dispenser may be consulted at Markets and Villages in the parish of St. Ann.

January.
23—Brown's Town Market.
27—Buxton Village.
30—St. Ann's Bay Market.

February.
4—Beecher Town.
6—St. Ann's Bay Market.
11—Priory and Salem Districts.
13—Brown's Town Market.
16—Golden Grove and Orange Park Districts.
20—Brown's Town Market.
25—Gibraltar Village.
27—Ocho Rios Market, calling at St. Ann's Bay.

March.
4—Runaway Bay Village.
6—Moneague Market, calling at Claremont.
10—Dry Harbour Village.
13—St. Ann's Bay Market.
16—Lime Hall and Higgin Town Districts.
20—Cave Valley Market, calling at Alexandria.
25—Bamboo Village.
27—Cave Valley Market, calling at Alexandria.

April.

1—Walkerswood Village.
3—Claremont Market.
5—Dry Harbour Mountains.
10—St. Ann's Bay Market.
15—Great Pond District.
17—Brown's Town Market.
21—Alderton Village.
24—Ocho Rios Market, calling at St. Ann's Bay.

People desirous of obtaining advice and treatment for sick animals are requested to communicate with the Veterinary Dispenser, Mr. L. T. McDonnough, New England, Chalky Hill, St. Ann, or to apply to the Hon. Secretary of the St. Ann Branch J.S.P.C.A., Mrs. G. Anderson Cocks, Knapdale, Brown's Town, St. Ann.

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F. D. MACPHAIL,
Manager.

THE REPORT OF THE JAMAICA BANANA COMMISSION, 1936.

(*Continued from the January Journal.*)

(c) The Safeguarding of Prices to the Producer.

The Association is upheld by many witnesses in claiming that it was only when there was competition with the American companies that growers in Jamaica received a reasonable price for their fruit. We have seen that competition since 1919 has been principally represented by the Jamaica Fruit and Shipping Company Limited, formed by Capt. S. D. List and Mr. C. E Johnston in 1919, the banana interests of which Company was absorbed by the Association in 1929. Prices certainly increased from 1919 onwards, as evidenced by the following table:—

TABLE XVII.—AVERAGE PRICES PAID BY UNITED FRUIT COMPANY. 1902-1935.

Year.	Per Count.	Year.	Per Count.	Year.	Per Count.	Year.	Per Count.
1902	1/5	1910	1/8½	1918	1/8½	1927	2/11
1903	1/10½	1911	1/9½	1919	2/6	1928	2/8½
1904	1/5½	1912	1/10½	1920	4/3½	1929	3/-
1905	1/5½	1913	1/10	1921	3/4	1930	2/0½
1906	1/6½	1914	1/9½	1922	3/1½	1931	2/2½
1907	1/7½	1915	1/6½	1923	4/1½	1932	2/4
1908	1/7½	1916	1/9½	1924	2/6	1933	2/10½
1909	1/7½	1917	1/10½	1925	2/5½	1934	2/11½
				1926	2/11	1935	2/10

When the Association entered the market the American Companies were apparently stimulated to increase their contracts in order to safeguard their supplies. Tables XVIII and XIX show the contracts held and the land under bananas leased or owned by the two Companies in recent years, and Table XX sets forth the total area in the Island recorded as being covered by contracts.

There seems little doubt that more stable conditions were introduced into the market, a valuable protection for the small grower. Although the acreage figures in all the tables must be regarded with reserve, they are placed on record here to show the tendency to increase contracts, for which purpose they may be taken as being relatively correct. They clearly indicate that since the Association came into being there has been a definite change of policy on the part of the Companies with regard to contracts.

The number of growers contracted to the United Fruit Company has increased from 472 in 1929 to 1,942 in 1935 and the acreage from 17,914 to 52,631. Since 1931 the Standard has increased the number of its contracts from 1,085 to 2,484 and its contracted acreage from 25,312 to 38,156. The greatest number of small growers is contracted to the Association.

TABLE XVIII.—LAND UNDER BANANAS (I) CONTRACTED (II) LEASED AND (III) OWNED BY THE UNITED FRUIT COMPANY OR THEIR SUBSIDIARIES.

Year.	Contracted. No.	Contracted. Acres.	Leased Acres.	Owned Acres.	Total Acres.
1929 ...	472	17,914	1,412	9,860	29,186
1930 ...	420	24,232	1,886	9,273	35,393
1931 ...	439	28,326	1,488	7,532	37,346
1932 ...	997	38,759	904	3,583	43,246
1933 ...	1,304	40,569	798	4,311	45,678
1934 ...	1,483	46,046	892	5,381	52,319
1935 ...	1,942	52,631	176	4,565	57,372

TABLE XIX.—LAND UNDER BANANAS (I) CONTRACTED; (II) OWNED OR LEASED BY THE STANDARD FRUIT AND STEAMSHIP COMPANY OR THEIR SUBSIDIARIES.

Year.	Contracted. No.	Contracted. Acres.	Owned or Leased. Acres.	Total. Acres.
1931	1,085	25,312	4,617	29,929
1932	1,630	32,174	4,196	36,370
1933	1,721	32,689	4,826	37,515
1934	1,819	29,545	4,658	34,203
1935	2,484	38,156	5,467	43,623

TABLE XX.—ACREAGE CONTRACTED TO EACH ORGANIZATION, 1931-1935.

Year.	U.F. Co.	Standard.	Association.	Total.
1931 ...	28,326	25,312	58,976	112,614
1932 ...	38,759	32,174	67,698	138,631
1933 ...	40,650	32,689	74,086	147,425
1934 ..	46,046	29,545	73,526	149,117
1935 ...	52,631	38,156	64,836*	155,623

We have already recorded the re-introduction of competition in 1919 with higher prices and the extension of the contract system, followed by further extensions when the Association became established in 1929, enabling large numbers of small settlers to contract for the sale of their total output, including six-hand stems all the year round.

Before this, the Companies were in a position to purchase freely in the open market to fulfil their requisitions. At times of abundant supplies in Jamaica and elsewhere the open market price would tend to be depressed below the true economic value of the fruit. With the Association in existence, the effect of the extension of contracts with the small producer was to withdraw from the open market a considerable volume of fruit hitherto available to meet the requisitions of the Companies. Prices would then necessarily be at least as high as the Association could pay; and, with extensive contracts and loyal contractors, as much higher as it was necessary for the Companies to bid to fill their requisitions. To this extent the Association has benefited all producers, and this view is supported by the evidence we have received.

It is possible to argue that if the Association had not been in existence other competitors would have stepped in and price levels been raised, and this point is discussed elsewhere. In any case the Association was in fact the body that brought about these benefits, and it is entitled in our view to the credit for them.

*Active Acreage 49,698 acres.

(d) The Protection against Domination of Foreign Companies in Jamaica.

Table XXI gives the total annual exports of bananas from Jamaica classified according to the country of destination.

TABLE XXI.—Stems exported from Jamaica showing Destination, 1929-1935.

Year.	U.K.	Canada.	U.S.A.	Other Countries.	Total.
1929	2,846,707	2,648,828	8,629,867	4,685,687	18,811,089*
1930	5,962,585	3,172,017	12,274,957	3,351,385	24,760,944
1931	6,656,470	3,325,302	9,865,155	2,465,938	22,312,865
1932	10,763,687	2,661,019	4,386,573	2,471,828	20,283,107
1933	6,398,956	1,851,491	337,707	1,974,301	10,562,455
1934	10,130,810	2,672,506	708,133	2,466,784	15,978,233
1935	15,734,573	2,353,254	1,154,247	1,017,229	20,259,303

Prior to the granting of protection by Canada in 1929 and by Great Britain in 1932 the bulk of shipments went to the United States. American interests had a large measure of control of purchase in Jamaica, of shipping and of sale whether in Europe, Canada, or the United States. This position was commented upon by the Imperial Economic Committee in 1926†. It gave rise to serious misgivings in Jamaica, particularly before the introduction of preference.

We have already recorded the almost unanimous opinion expressed by our witnesses in favour of keeping a competitor in the market in order to maintain the price levels and to secure that the marketable crop of the Island is accepted by the exporters without undue rejections We found equal unanimity in stressing the importance of that competitor being controlled and financed by British interests. Satisfaction was generally expressed that the establishment of the Association with its own ships and its own marketing organisations, however modest in the main importing countries, created a nucleus that could if need arose, be expanded to market a greater proportion of the Jamaica output.

Representatives of many trades and several public bodies including the Jamaica Chamber of Commerce, have urged that the Association should be maintained, even if recourse to Government assistance is necessary. Supporters and contractors of the American Companies have joined in this plea. They have shared in any benefit of competition without having had to contribute from their own pockets towards providing it as the loyal supporters of the Association had to do.

The United Fruit Company, rightly or wrongly, has had in the past a reputation, which goes beyond Jamaica, of arbitrary behaviour when it finds itself in a position of mastery, and there is almost universal fear of its domination.

Having said this we must add that there is equal appreciation in our evidence of the benefits that this company has conferred on the Island, for to it must belong the main credit for the development of the industry. The high standard of cultivation on the estates which it owns and leases, the improved housing and social amenities it has introduced for the workers on its estates, the extensive capital expenditure sunk in roads, buildings and equipment have all greatly contributed to the

*Total for April-December only : total for year 22,008,000 stems.

†Report of Imperial Economic Committee Cmd. 2658-1926. Referred to also at the West Indies Conference, 1925, and the Canada-West Indies Conference, 1925.

welfare of Jamaica. It has played a large part in the development of ports and made heavy contributions to the Government Railway and to general revenue. The supporters of the Association have been fully mindful of the debt which Jamaica owes to the United Fruit Company.

Similar remarks apply, in less degree, to the estates of the Standard Fruit and Steamship Company. Less apprehension exists regarding its operations. It is generally thought, however, that it is directly connected with the United Fruit Company and also that a contract or with it has somewhat doubtful security owing to its method of operating in Jamaica through a small subsidiary of the parent Standard Company.

On the first point we accept the assurance given us by the heads of both organisations that there is no formal agreement between them. The two Companies, dealing with the same products in the same markets, have found it good business to work in close harmony and friendly co-operation, though we concur that for practical purposes such an arrangement is as good, or better than, an agreement, and that under such circumstances the Standard Company cannot be regarded as a competitor of the United Fruit Company.

On the second point, viz.: the security of contracts, we have had the privilege of seeing the original agreements between the parent and subsidiary companies. Since our appointment, an additional safeguarding clause has been inserted. In order finally to dispose of doubts in this matter, full details are given in Appendix E.

On the evidence we have received there can be no doubt that the Island desires freedom from complete foreign domination of its most important industry, even though exercised by companies controlled in a neighbouring country with which Jamaica's interests are closely allied. The Association has provided a desired competitor.

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(e) THE PROTECTION AGAINST MONOPOLY IN SELLING MARKETS.

As already mentioned, the domination of the American Companies, prior to the formation of the Association, extended to the marketing of bananas overseas; thus they were able to influence the ultimate price of sale in America, Europe and Great Britain, and owing to their predominant position, are still able to do so.

It is contended that the subsidiaries of the United Fruit Company in the selling markets have indulged in what is regarded as unfair competition and propaganda, particularly in Great Britain, where disparagement of the Association's fruit, of its ability to maintain supplies and of its financial stability is alleged.

The Association and a considerable volume of opinion throughout the Island are sincerely apprehensive that a return to monopoly in countries of sale would place in grave jeopardy the future prices obtainable for the produce of Jamaica growers.

We think that considerable confusion of thought exists on this matter. We agree as to the desirability of Jamaican interest being independently represented in selling countries, particularly the United Kingdom, but we do not agree with many of the views expressed to us regarding the value to the producer of competition in selling markets.

A number of competing sellers in one market must in the long run tend to weaken price levels. In addition it usually means unnecessary expense in canvassing, distribution and overheads, whereas co-ordination of sales efforts tends to better nett realisations even if market prices remain unchanged. Particularly is this so with a perishable article which has to be sold within a limited time. Non-perishable goods are sometimes satisfactorily sold even by a weak seller in a competitive market by skilful adjustment to local and seasonal demand. Supplies can be released at just the place or time where or when competitors have left a gap. With perishable goods such refinements are seldom possible and we can find no reason to doubt that with bananas, as with other commodities, the fewer the sellers the stronger will be their position. Often a less important seller succeeds by performing functions which a large organisation, by reason of its scale is not suited to undertake. For bananas such lines of activity would include specialised packing of bananas for sale to multiple retailers and other distributors accompanied by foreground publicity for Jamaica fruit as such. If such functions could be clearly defined they might provide a basis of mutual development between the two organisations in England.

Working arrangements between competing sellers are also possible on the basis of zoning the sales area. The fact that the ports of arrival for the steamers of the two organisations are different provides a suitable basis for economies along this line.

Shipments have to be sold promptly on arrival, and in case of oversupply, surplus must be disposed of either by direct price-cuts or by alteration of grading, or other special concessions. Obviously, the scramble to dispose of a surplus when it arises, and at all times the desire to secure permanent channels of sale must lead to needless expense, lower realisations and keen competition between travellers and selling staff with the complaints of unfair methods and disparagement of competing goods that so commonly arise under such circumstances.

For these reasons we consider that it is in the interest of all the Island producers that the organisations should be co-ordinated as much as possible in every selling market, more particularly in the United Kingdom. Here it is also desirable in view of the increasing competition of

supplies from Brazil. Moreover, only by united action can any steps be taken towards regulating supplies in accordance with demand, and towards maintaining for Jamaica her full share of the British market.

Before leaving this subject, we must refer to opinions expressed by many witnesses that the United Fruit Company has on more than one occasion met competition by reducing the margin between buying and selling prices in one country, recouping its losses by enlarging the margin elsewhere. Thus for example, it is alleged they have raised the price in Jamaica and lowered it in England, either arbitrarily or by the influx of Central American fruit, in order to damage the Association, recouping itself by raising prices in Canada and America.

We have examined the trend of prices and can find no evidence of price changes that might not be accounted for by other factors. On the supply side, open market prices quite apart from the activities of the Association, would have tended to be on a higher level, first because of the tariff on non-Empire bananas; secondly, because while Central American bananas are bigger and fuller than Jamaican, they are somewhat more difficult to dispose of in the English market as they do not easily fit into the penny trade; thirdly, in 1934 and 1935 there was a slight recovery in the American market; and fourthly, despite the economic crisis, the market for bananas in the United Kingdom extended by one-third in the period 1929 to 1935. These reasons might well account in part for a hardening of the open market price in Jamaica, particularly about 1932.

On the marketing side in the United Kingdom there has to be taken into account the rapidly rising competition from Brazilian bananas, the fall in purchasing power and the general price level, the necessity for marketing a low priced banana to meet the increased competition of other fruits, and the diversion of Jamaican bananas from the American and Continental markets owing to depression and trade restrictions there.

We have no evidence to show that any price changes since 1929 have been due to deliberate action by the United Fruit Company to damage the Association. We think that the reason should rather be looked for in the competition between Jamaican and other bananas, and in many other factors from the effects of which both organisations are suffering.

(To be continued.)

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BRANCH NOTES.

All Reports received are acknowledged in this section of the Journal. This month we have only been able to put in print Notes from Branches who have not yet had a publication this year.

Branch Secretaries should write on one side of the paper only.

[Ed.

ST. MARY : Woodside.—Meeting 6.1.37. Present : Mr. A. B. Champagnie, M.P.B., President, Mr. D. A. Jones, Agricultural Instructor, and 9 members. Mr. H. S. Brodber was appointed delegate to the Half-Yearly General Meeting. Mr. Jones gave a helpful address on the subject of Authorized Persons. He also spoke on the Black Spot Disease. Rev. Williamson encouraged members to support the Branch. Mr. Champagnie addressed on "Economic Ways of Feeding the Family." The National Anthem brought the meeting to a close.

H. S. BRODBER,
Secretary.

Pear Tree River P.O.

CLARENDON : Alston.—Meeting 7th Jan. Though a damp evening, quite a few members turned out. Mr. G. Nelson, the Vice-President, called the meeting to order. Mr. J. Graham, Instructor, and Mr. W. Castello, Inspector of Plant Diseases attended. The Secretary congratulated the Branch on the social held on the 29th Dec., which was a great success, and moved a vote of thanks to the working committee and other friends who had made the venture the success it was. The Chairman added his quota of praise. Rev. R. U. Smith was elected as delegate to the Half-Yearly General Meeting. The Instructor addressed the Branch and based his remarks upon soil conservation and improvement. He asked, what had the Branch done for 1936? What fertilizers had been tried? What new and improved methods adopted? What new varieties of plants introduced? He advised that members try fertilizers on small plots, and recommended certain varieties for certain crops. He showed that with the limited land room at the disposal of members there was an urgent necessity for the use of manures. In closing, he reminded members that fertilizers go hand in hand with green dressing. The Instructor was given a hearty vote of thanks for his practical instruction. Mr. Castello next addressed the members and expressed pleasure at meeting and talking with agriculturists. He was not pleased with the way many persons were playing with the dangerous Panama Disease, and with the advent of the Black Spot Disease attacking from another point, it had become an urgent necessity that the utmost care be exercised. In some cases he had had to destroy plots of corn which were planted either too near or amongst growing canes, which was a means of spreading the Mosaic Disease. He gave some interesting hints in connection with the cultivation of Bananas and Sugar-cane.

T. N. WILSON,
Secretary.

Moravia P.O.

John Austin.—Meeting held 4th Jan. Present were : the President and 17 other members. Under correspondence, the Prize List and Rules of the forthcoming Show at Knutsford Park were presented to the house. Messrs. R. A. Bailey, A. Roberts and S. Shortridge were nominated for appointment as Authorized Persons. General matters : the President pointed out to the meeting the necessity of soliciting the Instructor's service whenever necessary. It was suggested that a visit be paid to Grove Place at an early date. This was agreed to, but further discussion was postponed until the Instructor could be present. The date of future monthly meetings was fixed for the first Monday in each month. The National Anthem terminated the meeting.

H. S. HALSTEAD,
Secretary.

Chapelton P.O.

ST. JAMES : Bickersteth.—Meeting 7.1.37. Present : Mr. H. A. Denton, President, the Instructor and 7 members. The President extended hearty greetings for the season and urged better attendance and general uplifting of the Branch. As matters arising from the minutes, Cyanogas was dealt with as an Insecticide, and the carrying of Panama Disease with mulch from infected areas. Mr. S. H. Barrett introduced an article from the Jamaica Times of Nov. 28, "Native Food Production," which was very valuable. The discussion which followed continued to the end of the meeting, though the agenda was not finished.

S. H. BARRETT,
Secretary.

Montpelier P.O.

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Mount Horeb.—Meeting held Jan. 23. Present : J. G. Johnson, 1st Vice-President, presiding, 13 members and the Secretary. Two new members were enrolled. It was decided that members must actually try out the planting of Red Peas and bring in reports before a definite reply to the questionnaire submitted from the Parent Society could be replied to. It was agreed that the Hon. Lowe be asked to visit the district on 3rd Feb. A committee was appointed to draft an Address to the Hon. Member.

S. A. SCOTT,
Mt. Horeb P.O. Secretary.

ST. CATHERINE : Bellas Gate.—Meeting held 11th Jan., 1937. Present : Messrs. C. S. Byles, Instructor, G. E. Markland, President, 11 other members, juveniles and visitors, and Foreman I. Rhone. The preliminaries were carried through. Authorized Person Zephaniah Thompson reported one attempt to arrest, and one arrest. Juveniles' Secretary made report. Instructor gave an address, speaking on nutrition, the kind of stock to rear for food and milk; vegetables, and also on methods to improve cocoa trees. He advocated better attendance at Branch meetings. The Foreman also addressed the meeting. Votes of thanks were conveyed to these gentlemen. Delegate submitted his Report on the meeting of the St. Catherine Branches Associated. He was thanked. The meeting terminated with the singing of the National Anthem.

A. A. MCCURDY,
Ballas Gate P.O. Secretary.

Springvale.—Meeting held 22.1.37. Present : the Officers, 16 members and 11 visitors. The Authorised Persons reported their activities during the month Much dissatisfaction was felt over existing conditions on Road No. 26B, and Messrs. David and Morris Wright added their quota of disapproval of such conditions. Members were glad to learn of Mr. Harold Lindo's experimental plot of Sweet Potatoes, and desired to add the "Louisian" variety to their holdings when that variety is extensively propagated. The necessity for an Assistant Secretary was again pointed out. To augment the funds it was suggested that an Impromptu Concert should be staged which would also mark the First Anniversary of the Branch. Routine matters were transacted. Meeting terminated with the National Anthem.

D. N. SHAKESPEARE,
Bog Walk. Secretary.

Wakefield.—Meeting held 5th Jan. Mr. Nath. Duffus, 1st Vice-President took the Chair. It was proposed that the Inspector of Police be asked to appoint Authorised Person Mr. Nath. Duffus to be a District Constable. It was also decided that the Secretary should attend the Half-Yearly Meeting as delegate. After minor matters were discussed and the Roll called, the meeting terminated with the singing of the National Anthem.

L. A. FERGUSON,
Linstead P.O. Secretary.

WESTMORELAND : Caledonia.—Meeting held 26.1.37. Present : Mr. N. A. Grey, President, 9 members and several visitors. As matters arising out of the minutes, the Secretary was asked to write to the Secretary of the W.B. Associated to find out what steps were taken to present resolutions (re Water Supply) for a deputation to meet the Parochial Board of Westmoreland. Members expressed their views on the

growing of vegetables. A visit to Grove Place was also discussed. It was decided to write to the neighbouring Branches re this trip, and ask them to join. The meeting ended with the singing of the National Anthem.

Lower Beeston Spring.—Meeting held 14th January. Present were 8 members and the President. Mr. R. Swaby acted as Secretary. The President noted that the matters sent up to the Parent Society had been dealt with. Letter advising that 6 Authorised Persons nominated by the Branch had been appointed was noted. Three reported that they had received their badges. Other business was dealt with and the meeting closed with the National Anthem.

R. A. SWABY,
Acting Secretary.

Beeston Spring P.O.

TRELAWNY : Granville.—Meeting held Jan. 4. President occupied the Chair. Apology for absence was tendered on behalf of the Instructor. Mr. Brown was appointed to represent the Branch at the Half-Yearly General Meeting. The Secretary was asked to write the Supt. of P.W. for Danger Signals, and also Rev. R. A. L. Knight to draft Resolution to be sent to the Half-Yearly Meeting. Authorised Persons submitted their reports. One arrest was recorded. Report on Demonstration Plot by Mr. Green was submitted. The meeting was brought to an end by the National Anthem.

H. N. FLETCHER,
Secretary.

Falmouth P.O.

Stewart Town.—Meeting held Jan. 26. Present were Rev. J. S. Rowe, President, Instructor C. M. A. Robotham, and nine members. The Secretary informed the meeting that the inaugural meeting of the Trelawny Branches Associated had been postponed from Nov. and was held at Jackson Town. A report of what took place was given. Experiments re Red Peas were discussed. The meeting was of the opinion that 12 :8 :8 was the fertilizer that gave the best results. The Instructor agreed with this and told of experiments carried out by him in the Dry Harbour Mts., as well as some seen at Temple Hall recently. Correspondence informing the Branch that the services of a Veterinary Officer were available to them, was read. The Instructor gave a description of the Black Spot Direase of Bananas and advised how it may be treated. He also spoke on Tympanites (Drum Belly) as found in cows and goats. Treatment was described by the Instructor. Minor matters were dealt with and the meeting terminated with the singing of the National Anthem.

W. W. BENJAMIN,
Secretary.

Stewart Town P.O.

Wakefield.—Meeting held Jan. 6th. Present : Mr. J. W. Thomas, 2nd Vice-President, the Agricultural Instructor, Mr. M. N. Thompson and a large attendance of members and visitors. During the day the Instructor visited and demonstrated at members' holdings. The following matters were dealt with : (1) District Branches Association, to which inaugural meeting five members were delegated. The Secretary was instructed to get the Deeside Branch to co-operate re conveyance to the meeting. (2) Selection of Cane Seeds. Orders for 600 seedlings were taken. (3) Visit to Grove Place. The Secretary was instructed to get in touch with the Superintendent. (4) Land Settlement. It was agreed to ask the Hon. Member for the parish to attend the next meeting to reconsider the Dromilly Scheme; and the Secretary was instructed to get in touch with W. S. Vickers, Esq., to fix a date to meet a deputation re the sale of Unity. (5) Subsidised Dispensary. The Secretary was directed to call on the Trelawny Parochial Board for a subsidised Dispenser for the District. Letter to the Department of Science and Agriculture through the Secretary of the J.A.S. re obtaining Havana Tobacco seedlings, was read. Authorised Persons reported 1 attempted arrest. Minor matters were dealt with and the meeting adjourned.

E. S. BLISS,
Secretary.

Wakefield P.O.

ST. THOMAS : Hagley Gap.—Meeting held 22.1.37. There were nine members present. After the usual preliminaries the expected visit of His Excellency, and the intention of the Yaws Commission to leave out this District, were discussed. It was the opinion of the House that there was a large number of cases of yaws in the section, and immediate treatment was needed. It was agreed that the Hon. Member be sent a letter on the matter which would be forwarded to the S.M.O. Mr. T. Orvill then brought forward the motion that badges or buttons should be worn by members of the Agricultural Society as a mark of distinction. The Acting Secretary was instructed to write to the Parent Society on the matter. Authorised Persons

reported all correct. The meeting was then brought to a close by the singing of the National Anthem.

(Miss) B. E. SINGLETON,
Hagley Gap P.O. Acting Secretary.

ST. ELIZABETH : Rose Valley.—Meeting held 7th Jan. Present were : the 3rd. Vice-President, in the Chair; 20 other members and a few visitors. The Instructor, Mr. M. N. Thompson, was in the district for the day carrying out demonstrations on pruning and budding. The Secretary read letter from the Trelawny Parochial Board on the matter of Road, and informed the meeting that the matter had been submitted to the Board of Management. The Secretary was directed to write a letter of sympathy to Mr. D. A. Henry, 2nd Vice-President, who has been unable to attend meetings for a few months owing to illness. Red Peas planting was discussed. Members were advised to bring in their orders at the next meeting. Arrangements for sending of delegates to the Associated Branch Meeting were discussed. Minor matters were dealt with and the meeting terminated with the singing of the National Anthem.

F. A. ROOMES,
Balaclava P.O. Secretary.

Malvern.—Meeting held 29th Jan. Present were : Rev. S. C. Ashton, President, Mr. H. W. Lynch, Instructor, Mr. J. A. Maxwell, President of the St.E.B.A., ten members and two visitors. The President extended a hearty welcome to the members. The Delegate's report to the Half-Yearly Meeting of the St.E.B.A. was read. Mr. J. Maxwell then gave a very interesting and instructive lecture on Corn Growing, stressing the need for deep tillage and thorough preparation of the soil. He advised extensive planting of the hybridized variety, and showed specimens of cobs with 24, 28 and 30 rows grown on his own field. Seeds from these were freely distributed to the members, and Mr. Maxwell was heartily thanked. The Instructor, in supplementing Mr. Maxwell's lecture, suggested a Corn-growing Competition for the Branch, to take place in June. Minor matters were dealt with and the meeting ended with the singing of the National Anthem.

(Miss) E. I. BLAKE,
Malvern P.O. Secretary.

MANCHESTER : Mizpah.—Meeting held 11.1.37. Present : Rev. J. Kneale, President, 6 other members and 4 visitors. The matter of acquiring a ram for the Branch was decided and the Secretary was instructed to forward the £1 17s. subscribed. The Committee appointed to examine the Demonstration Plot reported that a spot had been selected and that a square chain had been given out to be ploughed at a cost of 6/6d. It was decided that Irish Potato, Corn, Peas, Tomatoes and Citrus be grown. The Secretary was directed to ask the Instructor to select the necessary seeds. Mr. Gavin drew attention to the very bad condition of the Thompson Piece Road, which statement was supported by others. The Secretary was asked to remind the Parochial Board that the Dust Bins for Walderston, so long promised, had not been supplied. The Secretary proposed a local show for the Branch. The idea was accepted and the members asked to think about the matter until next meeting when it would be fully discussed. There was a discussion on the Control of Slugs. It was the concensus of opinion that a lot of "night work" would

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have to be done. After the singing of the National Anthem the meeting adjourned.

U. C. WOLFE,
Secretary.

Walderston P.O.

PORTLAND : Mahoe.—Meeting held 19th Jany. Mr. J. Boyd, 3rd V.-P. called the meeting to order and offered prayer. A plot for demonstration, Annatto and Cassava planting, were matters that came in for discussion. Correspondence dealing with a display of products produced by this Branch at the Half-Yearly General Meeting was dealt with. 23 members and many visitors were present. The Branch wished the delegate success in connection with the proposed demonstration. The singing of the National Anthem brought a delightful meeting to a close.

J. D. GRANT,
Secretary.

Bangor Ridge P.O.

Central Portland.—Meeting 23rd January. Present : Rev. J. E. Reid, President, 10 members and 1 visitor, Mr. J. L. Hinds, Secretary for the Portland Branches Associated. After the President delivered his opening remarks, he warmly extended the courtesy of the floor to Mr. Hinds, who suitably responded, and promised to do everything possible for the advancement of the Branch. The following matters were dealt with : (a) Red Peas Industry was discussed in detail, and as a result, the Branch discovered that the Industry is a lucrative concern. On Mr. Hinds suggestion it was decided that the Parent Society be written to for sample of Red Peas; (b) Whyaah Parochial Road; and (c) Water Supply. The following matters were brought forward . (a) Signs for the school area; (b) Rain Gauge for the town. The House supported both motions, and the Secretary was instructed to write to the proper authorities about the matters. Authorised Person F. McGibbon reported that the stealing of goats was very prevalent in the Snow Hill District. In consequence, a lengthy discussion ensued, and it was decided that the Parent Society be written to requesting that steps be taken to bring arrests for the stealing of goats under the jurisdiction of Authorised Persons. Minor matters were dealt with and the meeting terminated after the Roll Call, with the singing of the National Anthem.

ABDUL F. SPENCE
Secretary.

St. Margaret's Bay P.O.

Regale.—Meeting held Jan. 26. Present were : Messrs. J. H. Wright, President, and twelve members. The matter of a concert which was deferred was decided to be carried through before the end of February. Mr. A. W. Campbell, delegate to the Half-Yearly Meeting of the Portland Branches Associated, gave a very interesting report which was accepted by the House. A letter re Cascade Road, sent from Parochial Board through Hon. H. E. Allan, was discouraging to the Petitioners who thought the matter of paramount importance. It was decided to send monthly circulars to members as the attendance was not good for the past few months. After the closing remarks were given by the President, the meeting terminated with the National Anthem.

(Miss) G. I. CAMPBELL,
Secretary.

Spring Hill P.O.

ST. ANDREW : Rock Hall.—Meeting held 18th Jany. Present : Mr. W. H. Bolton, President, 15 other members. 1 visitor and Instructor C. V. D. Henderson, who demonstrated on the holdings of Messrs Theo. Heslop and Abraham Waugh before the meeting began. The Instructor advised members to support the Knutsford Park Show. He gave a very able and instructive lesson on Cultivation, and said stock-rearing must go hand in hand with cultivation. Roll Call and distribution of Journals was carried through. The Secretary was requested to make arrangements for the transportation of exhibits from the Branch to the proposed Show

(Mrs.) B. HESLOPE.
Secretary.

Red Hills P.O.

Westphalia.—Meeting held on 11th January. Present : Instructor Chas. D. V. Henderson. Mr. A. Campbell, President, and many other members. Discussion of the Red Peas Industry was taken up. The Instructor, by request, gave an inspiring and explicit address showing the use of Agricultural Society and its membership. He advised improved and modern methods. He spoke on the use of artificial manure for good yields. He also advised on the kinds of soil for profitable production of Red Peas. He advised members to keep small stock. He also touched on exhibits for the Liguanea Agricultural Show. Authorised Persons reported. The meeting ended with the National Anthem.

S. T. PARKS,
Secretary.

Mavis Bank P.O.

OTHER REPORTS RECEIVED.

Branch and Secretary.	Date of Meeting.	Attendance.	Business.
Clarendon.			
Mt. Airey .. (M. E. A. Dawkins)	14.1.37	35	Tobacco Industry. Half-yearly General Meeting. Authorised Persons. Vegetable Culture.
Portland—			
Breastworks .. (L. F. Ergus)	8.1.37	12	Show Committee. Lamp. Red peas Industry. Black Spot Disease. Lecture by Instructor.
St. Mary—			
Baxters Mtn. (R. J. L. Ricketts)	19.1.37	10	Highgate Bananas. Black Spot Disease. Authorised Persons. Cultivation of Tomatoes and Tobacco.
Epsom .. (Fred. A. Edwards)	6.1.37	10	Report of delegates re St. Mary Branches Assoc. Land Settlement. Authorised Persons. Ticket Distributor. Post Office. Yaws. Lecture by President.
Free Hill (L. B. Falconer)	28.1.37	11	Corn Growing. Red peas. Sweet Potatoes. Yellow Yams. Tomatoes. Tobacco. Authorised Persons.
Lucky Hill-Jeffrey Town (F. W. Geoghaghan)	19.1.37	32	Demonstration Plot. Social. Knutsford Park Show. Authorised Persons. Manures. Sanitation. Address by Instructor Coke.
Richmond (S. A. Officer)	22.1.37	13	Cocoa Trees. Cutting of immature bananas. Authorised Persons.
Manchester—			
Mile Gully (T. A. Morris)	22.1.37		Guava Industry. Red peas. Coffee. Black Spot Disease.
Westmoreland—			
Porters Mtn. (D. F. Brown)	18.1.37	19	Report of meeting of Westmoreland Branches Assoc. Authorised Persons. Corn Competition.
St. Elizabeth—			
Springfield (R. E. Witter)	1.1.37	11	Demonstration Plot. Routine matters.
St. Andrew—			
Westphalia (S. T. Parkes)	28.12.36	..	Red peas. Knutsford Park Show. Address by delegate re meeting of St. A. B. Assoc.

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"	20	"	9d.
"	30	"	1/6
"	40	"	2/-

and an additional 6d. for every additional 10 plants or portion of 10 plants.

N.B.—BOXES ARE NO LONGER RETURNABLE.

FRUIT TREES AND PLANTS.—Price 1½d. each, except where otherwise stated, delivered free at any railway station.

Star Apple, Otaheite Apple, Jack Fruit, Nilgiri Hills Blackberry plants from beds; Coco Plum, Naseberry, Granadilla, Guava, Cherimoya, Mangosteen, 1/-; Grape, 4½d.

ECONOMIC PLANTS.—Price 1½d. each, except where otherwise stated, delivered free at any railway station.

Ylang-ylang (Cananga odorata), Cinnamon, Annatto, Breadfruit, 9d.; Sarsaparilla, Avocado Pear.

ORNAMENTAL SHADE TREES AND SHRUBS.—Price 1½d. each, except where otherwise stated, delivered free at any railway station.

Bauhinia Galpini; Brownea coccinea, Couroupita guianensis (Cannon-Ball Tree), Dillenia indica, Michelia Champaca (Champac Tree) Palms, several species; Poinciana regia (Flamboyant), Posoqueria longiflora, Saraca indica (Asoka Tree), Tecoma spectabilis (Poui), Jacaranda mimosæfolia, Spathodea campanulata, Cassia nodosa, 4½d. each, Triplaris surinamensis, 4½d. Ficus lucida 1/6. Cassia grandis, 4½d.; Thuja 9d. each. Ficus elastica, 1/6 each. Murraya exotica; Cordia sebestea, Diospyros discolor (Ebony), Lignum vitae.

FREE ECONOMIC PLANTS.—Pithecolobium arboreum (Wild Tamarind), from beds; W. I. Cedar, Mahogany, Bastard Cabbage, Bitter Damsel.

NOTE.—Plants are conveyed free by railway. They are guaranteed in perfect order when sent out of the Gardens, but the Department is not liable for any loss or damage in transit. Plants will not be sent to private residences.

"Pioneer"

The Best Feed
For Every Need

Poultry:

From 1 to 6 or 7 Weeks old
PIONEER CHICK MASH
PIONEER CHICK SCRATCH

From 6 or 7 Weeks to 4½ or 5 Months
PIONEER GROWING MASH
PIONEER DEVELOPING SCRATCH

From 4½ or 5 Months on
For Egg Production
PIONEER LAYING MASH
PIONEER SENIOR SCRATCH

For Table Use Broilers and Capons
Feed same as above but use PIONEER BATTERY Chick Mash in place of Pioneer Chick Mash and PIONEER FATTENING MASH in place of Pioneer Growing Mash and Pioneer Laying Mash

Turkeys:

From 1 to 6 Weeks old
Pioneer TURKEY Starter
From 6 Weeks old on
Pioneer TURKEY Grower

Pigeons:

Pioneer PIGEON FOOD

Enquiries Solicited:

WHOLESALE FROM *Adolph Levy & Bro.*

THE JOURNAL
OF THE
Jamaica Agricultural Society.

The more people do the more they can do; he who does nothing renders himself incapable of doing anything; while we are executing one work we are preparing ourselves for undertaking another.

Vol. XLI. APRIL, 1937. No. 4.

BOARD OF MANAGEMENT.

The regular monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the office of the Society, 10-12 North Parade, Kingston, on Wednesday, the third day of March, 1937, at 11.30 a.m. There were present: Hon. Geo. Seymour Seymour, O.B.E., First Vice-President, in the Chair, Rev. W. J. Thompson, Second Vice-President, Messrs. R. A. Burke, T. J. Cawley, T. P. V. McDaniel, D. D. Phillips and S. M. Walker; Messrs. P. St. L. Bacquie and A. P. Hanson, Supervisors of Instructors and the Secretary, Glaister Baxter.

Shortly after the meeting began, Hon. A. C. Barnes, Director of Agriculture (*ex officio*), Hon. C. A. Reid, Messrs. Sidney Barton and D. T. Wint attended.

Apologies for Absence.

Apology for absence was submitted on behalf of Mr. McKay.

Confirmation of Minutes of the Previous Meeting.—

Copies of the minutes of the previous meeting having been sent to individual members of the Board, they were taken as read, and on the motion of Mr. McDaniel, seconded by Mr. Cawley, they were confirmed.

Matters Arising Out Of The Previous Minutes:—

(a) *Statement by Secretary.* The Secretary stated that all the correspondence consequent on the deliberations of the Board at their last meeting had been duly carried through.

(b) *Mr. Thompson's motion re consideration of increments to employees of the Society.*

Mr. Cawley suggested that in view of the letter from the Hon. Colonial Secretary in regard to the Estimates, no object would now be served in moving the resolution.

The Secretary pointed out that there were two other items listed lower down on the agenda bearing on the same matter. He then read: *Letter from C.S.O. re Estimates* as follows:—

1st March, 1937.

Nos. 6822/36.

"With reference to your letter No. 115 of the 4th December, 1936, I am directed to inform you that having regard to the Colony's financial situation it is impossible for the Government to agree to any increase in the Subvention made to your Society

and that a sum of £10,500 will accordingly be included in the draft Estimates for consideration. Your Society should amend your Estimates accordingly.

2. The sum of £10,500 has, however, been included in the Estimates subject to reconsideration in the light of decisions which may be reached in regard to the reorganization of the Colony's Agricultural Instructorate, proposals for which are now under consideration by your Society.

3. In view of the pending retirement of the Secretary provision for the initial salary for this post should be included pending any recommendation which your Society may subsequently make for filling the post.

4. The Government is unable to agree to any increase in the number of Agricultural Headmen at the present time.

5. The Estimates are returned herewith.

(Sgd.) J. D. LUCIE SMITH.
for Colonial Secretary.

On the motion of Mr. Thompson, seconded by the Chairman, it was decided that the Board go into Committee to consider the recasting of the Estimates.

The decisions arrived at in Committee and confirmed by the Board were that the amount of £150 allocated for Prize Holdings Competitions should be deleted from the Estimates, and the total cash reserve of £557 should be absorbed to balance the budget. And also that the Government should be advised that the Board was of opinion that it was preferable to retain the allocation for the services of additional Headmen and delete the allocation for Prize Holdings Competitions.

Memo from Supervisor Hanson re Increment. The Secretary read the following:—

Stony Hill P.O.,
23rd February, 1937.

"Kindly place on the Agenda for the next monthly meeting of the Board of Management, J.A.S., the legal contract under which I am employed to the said Board as per resolution embodied in minutes of the Instructors Committee 2/9/36, and adopted by the Board (see also Society's Journal for October, page 583). In the circumstance I respectfully submit that the salary attached to my substantive office as from 1st April next is £575 per annum including travelling."

(Sgd.) A. P. HANSON.

The discussion which took place on this matter disclosed that the Board had at a previous meeting passed a resolution withholding all increments except in the case where the Board had been bound by legal contract. That the Estimates had been submitted to Government without inclusion of increments to the staff as per the clause in the Rules and Regulations governing the Society's Staff which dealt specifically with this subject, and no application had been made to Government for the necessary funds to allow these increments.

It was proposed that the Estimates should be recast and the question of increments reconsidered.

Mr. Thompson then submitted the following resolution, notice of which had been given at the previous meeting:

"That the whole question of increments to the employees of the Society be dealt with."

This was seconded by Mr. Burke for discussion.

The Chairman said that as this resolution was in direct opposition to the decision arrived at by the Board at their meeting held on the 25th November, 1936, in connection with the same question, the matter could only be dealt with as prescribed by Bye-Law No. 18 of the Board of Management, i.e., with the consent of two-thirds of the members present and voting.

He then put the matter of the reopening of the question to the vote,

and it was lost: five members voting in favour, three against, and three not registering their votes.

(c) *Resignation from Secretary: Report from Deputation.*

The First Vice-President reported with regard to the deputation that waited on His Excellency the Governor to voice the desires of the Board as to the retention of the services of the Secretary; that the request was unsuccessful as His Excellency, although appreciating the services of the Secretary, was unwilling to increase the subvention of the Society for the purpose of increases of salary.

The Board then considered arrangements for filling the position of Secretary and decided that Mr. P. St. L. Bacquie be appointed to act in the position as from the first of April next

It was further decided that Mr. Bacquie should report in office on the 15th March, so as to familiarise himself with the current matters connected with the office, and that during the period until the 31st March, 1937, he be given a special subsistence allowance of £2 10/- per week.

(d) *Land Settlement: and letter from C.S.O. re ex-Soldiers Settlement at Coolshade, (St Catherine).* The following was read:—

No. 14/35.

11th February, 1937.

"I have the honour to acknowledge with thanks the receipt of your letter No. C.S.O. 130 of the 12th January, 1937, intimating that your Society has allocated a sum of Five Pounds to be used for the supply of seeds and plants to the settlers at the Ex-Soldiers Land Settlement at Coolshade, in St. Catherine.

2. I shall be glad if the Society's decision in regard to the appointment of an Agricultural Foreman for the Settlement may be communicated to the Government in due course."

(Sgd.) F. L. BROWN.
for Colonial Secretary.

It was decided that the Government should be advised that the Board proposed, as was reflected in the Society's Estimates now before Government, to increase the number of Agricultural Headmen in their employment and if this proposal met the approval of Government the Board would then be in a position to allot the required Foreman for service in the Coolshade Settlement as necessary.

In reply to a question put by Mr. Cawley, the Secretary stated that he had forwarded to Government copy of the Report which he had placed before the Board at their February meeting on the subject of the Coolshade Land Settlement.

(e) *Date of Half-Yearly Meetings.* On the motion of the Chairman, seconded by Rev. Mr. Thompson, it was decided that in future the Half-Yearly Meetings should be held on the second Thursday in January and the fourth Thursday in July in each year.

Mr. Cawley moved the adjournment of the meeting and informed the Board that he had been making certain arrangements to have a presentation made to the retiring Secretary, Mr. Baxter, and asked for the Board's co-operation in the matter.

A Committee consisting of the three Vice-Presidents and Mr. Cawley was appointed to make all arrangements for this function.

The meeting then adjourned for luncheon.

On the resumption there were present: Hon. Mr. Seymour, in the Chair, Rev. W. J. Thompson, Hon. A. C. Barnes, Mr. T. P. V. McDaniel, the two Supervisors of Instructors, and the Secretary.

It was decided to continue the Agenda and have the business done ratified as soon as there was a quorum.

Statement of Accounts.—

(a) *Statement for January.* The Secretary stated that this appeared in the minutes.

(b) *Statement for February* was submitted as follows:—

STATEMENT OF ACCOUNTS FOR FEBRUARY, 1937.

Receipts.	Estimates.	Total.
	£ s. d.	£ s. d.
To Subscriptions	190 0 0	125 8 4
Affiliation and Journal Fees	190 0 0	165 2 7
Advertisements in the Journal	400 0 0	123 3 2
Miscellaneous	10 0 0	13 6 11
Beekeeping Industry · Sales		2 11 4
Sales Department Profits, 1936-37	400 0 0	
Government Grant	10,500 0 0	10,500 0 0
	£11,690 0 0	10,919 12 4
Balance from 31st March, 1936		809 12 7
New Premises: Alterations and Additions ...		1,000 0 0
Agricultural Shows: Deposits		34 15 2
Beekeepers' Organization		0 5 0
Seeds Trading Account		5,137 15 8
		£17,912 0 9
Less Expenses per contra		16,666 10 0
Balance		£1,245 10 9
Cash in hand	93 12 2	
Cash at Barclays Bank, Current A/c	533 18 9	
Cash at Barclays Bank, Special A/c	176 5 10	
Cash at Royal Bank of Canada, Current A/c ...	441 14 8	1,245 10 9

GOVERNMENT SAVINGS BANK

(Guaranteed by the Government of Jamaica.)

Deposits and withdrawals may be made at any of the 120 Branches in the Island.

Interest is added half-yearly on the 31st March and the 30th September.

Accounts may be opened with a deposit of 1/-.

The limit of deposits to any one account is £500.

F. D. MACPHAIL,
Manager.

Expenditure.	Estimates. £ s. d.	Total. £ s. d.
By Personal Emoluments :—		
Secretary and Office Staff	2,142 5 0	2,070 0 5
Supervisors and Field Staff	7,516 0 0	7,210 15 6
Instructors' Educational Courses and Attendance at Half-Yearly Meetings	125 0 0	116 5 5
Instructors' Tools and Equipment	100 0 0	97 3 8
Secretary's and Office Travelling	100 0 0	111 3 7
Printing and Stationery	100 0 0	121 5 2
Printing and Issuing Journals and Reports ...	850 0 0	848 5 3
Rent and Rates	58 0 0	54 2 5
Postages and Telegrams	10 0 0	9 3 11
Telephones	27 0 0	28 4 8
Maintenance of Office Equipment	15 0 0	13 17 0
Incidentals	50 0 0	53 13 0
Auditor's Fees	25 0 0	25 0 0
Library Books	10 0 0	3 19 6
Show Equipment Repairs	15 0 0	8 7 1
Mango Extension Plots : Citrus Budwood, Livestock Subsidies	150 0 0	102 14 10
New Office Equipment	40 0 0	40 0 2
Encouragement Juvenile Branches	10 0 0	2 2 0
Fertilizer Experiments	25 0 0	5 14 7
Cassava Trial Plots	30 0 0	35 14 0
White Yam Competitions	25 0 0	
Prize Holdings Competitions	150 0 0	
	£11,573 5 0	10,952 12 2
Holdings Improvement Competition : St. Thomas ...		10 0 0
Beekeeping Industry		96 6 10
New Premises : Alterations		826 9 2
Travelling Advances		265 0 0
Plant Disease Control		0 9 6
Shows A/c		23 17 10
Beekeepers' Organization		3 12 0
Seeds Trading Account		4,488 2 6
		£16,666 10 0

(Sgd.) GLAISTER BAXTER,
Secretary and Treasurer.

(Sgd.) DONALD MACDONALD,
Accountant.

Resignation from Major Moxsy.

Letter from Major Moxsy, dated 17th February, 1937, was submitted tendering his resignation as a member of the Board.

This was accepted with regret.

Communications.—

(a) *Letter from Acting Surveyor General re Sale of Lumber on Crown Lands.* The following was presented :—

No. 1150/995.

1st February, 1937.

"I beg to acknowledge the receipt of your letter No. 447 of the 16th January enclosing copy of a resolution from the Rose Valley Branch re the sale of lumber on Crown Lands, but I regret to state that I am unable to accede to their request.

In view of the Report sent in by the Forestry Expert recently in Jamaica, and the possible reorganization of a Forestry Branch in the near future, I consider that exploitation of the Crown Lands timber resources should be kept as low as possible. I am also not in favour of the indiscriminate sale of lumber from the Crown Lands, and this would create a dangerous precedent.

Crown Lands' lumber, if sold, must be sold at an economic price, and I think that they could fill their requirements as advantageously from other sources.

(Sgd.) E. D. STANSFELD,
Acting Surveyor General.

This was noted.

(b) *Letter from Red Hills Branch (St. Andrew) re control of rats and bats in District.* This letter stated that due to the presence of a cave in the district in which literally billions of bats lived, a considerable amount of fruit produced were being destroyed by these bats, and requested that certain measures be adopted for the extermination of the pests.

The Director of Agriculture stated that the matter had been submitted to his Department.

The Secretary was directed to refer the letter to the Director of Agriculture who promised to advise the Board of what action had been taken.

Reports from Committees.—

Bee Industry. The following was submitted:—

3rd March, 1937.

Gentlemen,

Your Bee Industry Committee met this morning and beg to make the following recommendations:—

1. That the letter of agreement covering the services of the Bee Instructor remain as it is as the Committee feels that the situation is entirely covered by the Rules governing all employees of the Society which has been mentioned in the letter as a part of the terms of services.

2. The Committee has adopted the report with reference to the removal of the Hilroy Apiary to its new location and its re-equipment as an added safeguard in view of the recent Foul Brood situation. We also recommend that a copy of this report be forwarded to the Director of Agriculture with the request that funds be provided for this purpose from the Government Subvention.

3. We considered letter from Mr. Jas. H. Blackwood, referred by the Board and the Committee feels that the suggestions cannot be adopted as they stand and recommend that Mr. Blackwood be written to thanking him for his letter and pointing out to him that with reference to Bee literature, that a page of the Journal of the Jamaica Agricultural Society could best be utilized for the purpose, and that in view of the present financial position of the funds available for bee instruction, his suggestions cannot be considered at the moment.

(Sgd.) GLAISTER BAXTER,
Secretary of the Committee.

On the motion of Mr. Thompson, seconded by Mr. McDaniel, the Report was adopted, pending confirmation.

(b) *Instructors' Committee.* The following was submitted:—

3rd March, 1937.

Gentlemen,

Your Instructors' Committee sat this morning and beg to make the following recommendations:—

1. That the days used by Supervisor Bacquie during the month of February whilst he was on leave be returned to him by extending his leave to 6th March.

2. That the outline of Scheme for Harvesting Varietal Cassava Plots as submitted by the Secretary herewith attached, be authorized.

3. That the suggestion of Supervisor Hanson for carrying through a corn planting plot on the same lands from which the peas are now being reaped at Temple Hall for carrying through a fertilizer experiment on similar lines as was done with the pea plot be authorised and the expenditure met from funds at the credit of the Vote for Experiments.

4. That application for affiliation from the Avicultural Society of Jamaica be granted.

(Sgd.) GLAISTER BAXTER,
Secretary of the Committee.

OUTLINE OF SCHEME FOR HARVESTING VARIETAL CASSAVA PLOTS.

There are 40 sub-plots in each trial plot. These should be carefully divided into 4 and each fourth harvested at intervals of 12 months, 15 months, 18 months and 21 months old.

All cassavas harvested should be carefully weighed and records kept showing variety, whether fertilized or unfertilized, age when reaped and weight of product. Ten-pound samples labelled with all particulars should then be sent direct to the Island Chemist for starch analysis, with covering letter to him and copy of the letter to the Secretary, Jamaica Agricultural Society.

The remaining amount of cassava tubers, after each reaping, should then be marketed to the best advantage, the necessary return for this being made to this Office.

The cassava sticks should be carefully segregated by varieties and replanted in the plot to serve as plants to supply the demand should the industry develop.

On the motion of Mr. Thompson, seconded by the Chairman, the report was adopted.

Mr. Walker joined the meeting. The Chairman outlined what had been considered so far, and Mr. Walker agreed to the decisions that had been made.

On the motion of the Chairman, seconded by Mr. Barnes, the proceedings of the meeting so far were duly confirmed.

Disease of Plants and Animals: Insect Pests.

(a) *Panama Disease of Bananas: Report for December*, 1936 and (b) *Report for the year* 1936. The Secretary laid on the table the Report for the month of December, 1936, on the incidence of Panama Disease of Bananas, also a Report for the year 1936, and stated that copies had been issued to individual members of the Board.

Office.

(a) *Secretary's Report on travel for February* was presented and noted.

Competitions.—

(a) *Revised Rules governing White Yam Competition.* The Secretary submitted the revised Rules to govern the White Yam Competitions to be conducted in the parishes of Clarendon and St. Ann.

These were approved.

(b) *Report from Instructor Atkinson re Pea Competition (Brittonville).* The Secretary presented a Report from Instructor Atkinson on a local Pea Competition held by the Brittonville Branch.

The results of the competition were considered very useful, and the Secretary was directed to publish the Report in the Journal.

Resolutions from Branches.—

(a) *Clarendon Branches Associated re:* (i) *Medical Treatment for* School Children. This resolution asked that the proper authorities be approached with a view of having all school children medically examined periodically, and that treatment be given to sick children whose parents were found incapable of obtaining the necessary treatment.

The Secretary was directed to forward the resolution to the Parochial Boards' Association.

(b) *Land Settlements at Ashley Pasture and Rock River.* Two resolutions were submitted asking that the Government be requested to purchase the properties named for Land Settlement purposes.

The Secretary was instructed to obtain the necessary information before submitting the resolutions to the Government.

(iii) *Medical Services for Milk River.* This resolution represented the need for a Public Dispensary for the districts around Milk River and that the District Medical Officer visit the district at least once a week.

The Secretary was directed to refer this request to the Superintending Medical Officer.

(iv) *Sale of Immature Bananas.* This resolution asked that representations be made to effect a check on the sale of immature bananas.

The Secretary was directed to advise that this matter was already receiving attention.

(v) *Importation of Aberdeen Angus Bulls.* This resolution stated that it was understood that the Government did not propose to import Bulls of that breed and requested that the Director of Agriculture be requested to consider the continued importation of them.

The Director of Agriculture said that it was not the intention of his Department to discontinue the importation of the breed, although they had been unfortunate with their last importation.

The Secretary was directed to convey the information to the Association of Branches.

(b) *Free Hill re employment of Authorised Persons on "Banana Days."* This resolution advocated that Authorised Persons should be put on duty on "banana days" and be paid whether cases were made or not.

The Secretary was directed to advise the Branch that the Society had no funds to carry out the proposal.

(c) *Ulster Spring re Authorised Persons and arrests made after 9 p.m.* This resolution stated that Authorised Persons suffered great inconvenience if they arrested suspects after 9 p.m. as the Police at the nearest station in most cases would not hold themselves responsible for the custody of such persons, and requested that the Law be amended in this connection.

The Secretary was directed to make representations to the Inspector General of Police with regard to the matter.

(d) *Retirement re supply of Red Peas for planting.* This resolution asked that an order from the Branch for peas be augmented by a free supply from the Society, and the Secretary was directed to advise the Branch that the Board regretted that they had no funds to permit that the request be granted.

(e) *Comfort Hall Branch re retaining the services of Mr. Baxter as Secretary.* Regarding this resolution the Secretary was directed to advise what had been done in the matter.

(f) *Orange re road.* The Secretary was directed to forward this resolution which asked that a portion of the main road near the Sudbury Government School be asphalted, to the Public Works Department.

(g) *Adelphi re services of Tobacco Expert.* The Secretary stated that he submitted this resolution for record, and would forward the information regarding the services of the Tobacco Expert to the Branch.

(h) *Toll Gate re Compulsory Education.* This resolution asked that the necessity for enforcing compulsory education throughout the Island be urged on the Government.

The Secretary was directed to advise the Branch that the Board was not prepared to support the resolution at the present time.

(i) *Red Hills re tenancy of Lands.* The Secretary stated that he had received a letter from the Red Hills Branch, complaining of a certain landlord's treatment to tenants. He had replied explaining to the complainant that as per the documents sent in, the tenants had agreed to certain clauses in the contracts they had signed, which clauses were being enforced by the landlord.

The Board approved the action of the Secretary.

New Members.—

The following names were submitted for election:—

Miss Lily E. Wallace, Verdun Guest House, Black River.

T. N. Duval, Gordon Town.

Glaister Baxter, Kingston.

On the motion of the Director of Agriculture, seconded by the Chairman, Mr. Baxter was elected as an Honorary Member of the Society.

The other members were duly elected to membership of the Society.

Other Business.—

The Secretary stated that Items (a) *Letter from C.S.O. re Estimates*, (b) *Memo from Supervisor Hanson re increment*, had been dealt with in conjunction with the revision of the Estimates.

(c) *Report from Secretary on visit to Westmoreland and Hanover.* The Secretary presented the following which was noted:—

1st March, 1937.

To the Board of Management:

Gentlemen,

I visited the Westmoreland area, the district of Instructor Kelly and a part of Hanover, the district of Instructor Hastings on February 17th and 18th. This was in deference to a long standing promise made to the President of the Westmoreland Branches Associated with a view of my inspecting these areas and making some suggestions for the establishment of alternative crops supplementary to their major crops of cane in Westmoreland and bananas in Hanover.

The banana area of Hanover needs no more unusual development than we now undertake in similar districts in the Island, such as the encouragement of coffee, cocoa, citrus, annatto, etc., as being more permanent and indestructible crops than the banana.

The flat areas of Westmoreland, however, are still in need of some crop that would offer the small farmer a supplementary crop to cane, and I saw several thousand acres of very suitable soils for rice, an industry which is already developed there on a small scale. The importation of rice into Jamaica is considerable, the imports for 1935 having been £149,075, *vide* Trade Report for the Colony of Jamaica, 1935.

I had the advantage of an interview with one large proprietor who owns a considerable acreage of this land—approximately 500 acres, and he intimated his willingness to facilitate any organised development that might be undertaken.

The Rice Industry has never attracted large numbers of our native small farmers, due mainly to the fact of the uncontrolled water conditions that exist on the soils that are suitable for this cultivation, but this feature of the matter could be economically and efficiently set right by the use of levees and modern pumping machinery.

It is impossible to go into great detail in this matter in this Memorandum, but I would commend the matter for further study by the Board of Management for the advantage of the parish of Westmoreland.

Special mention should also be made of the ability of the soils around Mt. Airy for producing a tobacco of high quality, as there should be possibilities of its further extension and organisation.

(Sgd.) GLAISTER BAXTER.

(d) *Resolution from Mt. Horeb Branch re services of Agricultural Headman.* This Branch represented the need for the services of an Agricultural Headman in their district.

The Secretary was directed to advise that this application would be considered along with similar ones in due course.

(e) *Resolution from Islington Branch re road and Speed Limit Signs.* The Islington Branch requested that representation be made to have speed limit signs erected at the approaches to the Hillside Government School and the Infant School at Bottom Albany, and that the stepping stone washed away from the stream by the Friendship Cross Roads be replaced.

The Secretary was directed to submit these requests to the proper authorities.

The Vice-President was authorised to deal with a request made by an Officer regarding his salary for March.

The meeting then adjourned to Wednesday, the seventh day of April, 1937 at 11.30 a.m.

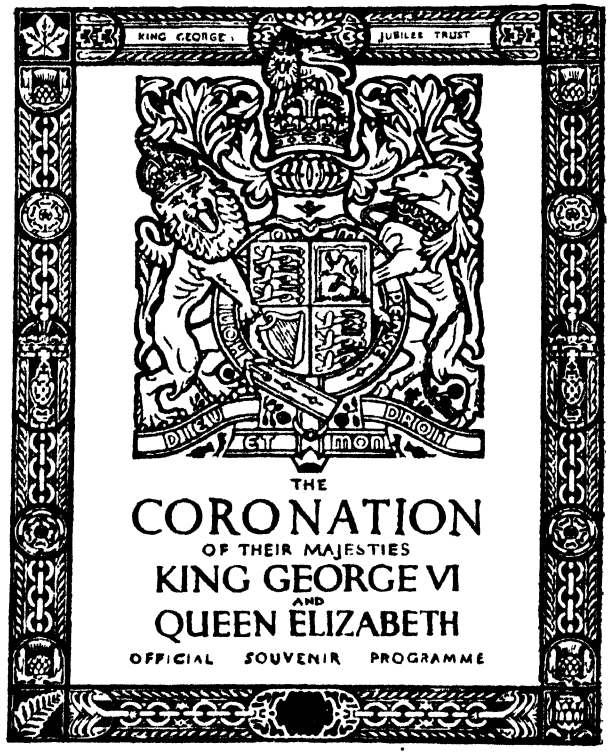
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EDITOR.

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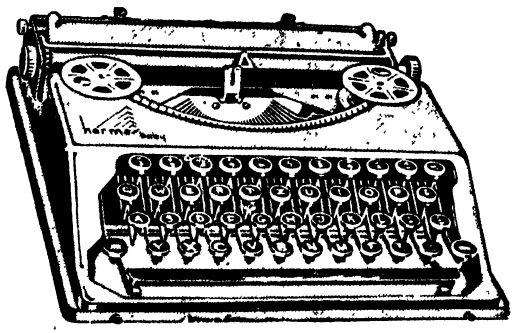
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SOME MATTERS OF INTEREST CONCERNING DIET AND NUTRITION IN JAMAICA.

(By DONALD MACDONALD, Accountant, J.A.S.)

One of the most welcome announcements recently made was, that His Excellency the Governor had appointed a Committee to enquire into the subject of Nutrition as it affects the inhabitants of this Island. It goes without saying that if this Committee succeeds in achieving its objects—and the task set them is by no means an easy one—and is able to issue a comprehensive report as a result of information gathered, an entirely new era will be opened up in Jamaica, as we will then have to set about to produce larger quantities of those foods which contain many essentials that are known to be lacking in our dietary to-day. It will be impossible for us to remain in a state of mental inertia over this very important question when we see other Colonies adopting the recommendations of their own Nutrition Committees and leaving us behind in the standard of living. This Nutrition problem is not confined to Jamaica alone, but embraces all the other West India Islands and British Colonial Dependencies. We have been fortunate to have among us a few students of Nutrition who have in the past given freely of their knowledge and pointed out quite clearly our food deficiencies with little or no noticeable effects, as our food imports continue to rise each year instead of decreasing. Strange to say, if the majority to whom this useful advice has already been imparted were suddenly to find themselves in possession of a new motor car, an intensive study of its peculiarities would immediately be commenced. In a short while a mass of important data relative to motor car operation and care would be carefully memorised by persons barely able to read but whose interest would be sufficiently aroused that one impression of a fact would be indelibly impressed on the memory. Even the garden boy who has a great desire to sit behind a steering wheel, but has not yet learned to handle the levers, would yell out a warning to his master if he observed him replenishing his storage battery with water drawn from the tap, and worse of all if he used a metal container in doing so. The boy has already learnt in some way that some strange contamination of the water will injuriously affect the delicate parts of the battery and that only distilled water must be used in this part of the car. Assuming that his master knows next to nothing about the care of a car, he will be able to advise that the heavy grade of oil used with the big car is quite unsuited for the little car and that the radiator must be kept filled, and should the water boil when ascending a steep hill, it is risky to add cold water until the heat subsides. How did this apparently dull and stupid individual come to be so well informed? The answer is simple: He has aroused his mind in order to accomplish a desired aim and knows that there are several difficulties to be overcome, so he sets himself out to learn all the secrets of this complicated mass of machinery. Many tales are told by stranded motorists of invaluable assistance rendered by inconsequential-looking youths who display a remarkable knack of tracing trouble in a stalled motor. All this goes to prove that the standard of intelligence is not so low that the average citizen with a little concentration cannot acquire a good working knowledge of the teachings of Science in any direction where he stands to benefit and improve himself—provided it is interesting enough to stir up his imagination. The all-important question of health and physical fitness

has been given considerable attention by the Central European Powers and even in conservative Great Britain the subject has come to the front with a rapidity which is convincing. Led by Germany who first appeared to have taken the initiative to nationalize sport and physical training among the youth of both sexes we find the movement spreading in all directions until to-day we are experiencing some of the results as physical fitness cannot be obtained if the diet is wrong. As food and nutrition is the keystone to perfect health and right living, it was not surprising to find a good deal of activity taking place in the Mother Country to ascertain whether the people were eating the right foods and to discover what elements were lacking in the average diet so that steps may be taken to correct the errors in order to secure the maximum amount of benefit from the daily food intake.

It is with the object of passing on the knowledge acquired in regard to Nutrition that has led the Secretary of State for the Colonies to appoint a Committee of the Economic Council in England to survey the present state of our knowledge in regard to Nutrition, so as to ensure that we are in close touch with all the latest discoveries. It is a tribute to our own Government that the local Committee selected to carry out the directions of the Secretary of State consists of individuals in whose ability we have learned to repose every confidence, and we are particularly fortunate in securing the services of one world authority in the person of Dr. McCulloch, whose researches in West Africa have added much to what is now known concerning tropical dietaries. Dr. McCulloch has on occasions lectured to us on certain weaknesses in our dietary here, though how far we have observed and put into effect his experienced advice is doubtful, bearing in mind that instead of turning to our own local foods we seem to be relying more and more on imported foodstuffs for daily sustenance, as the Official Statistics disclose.

The Committee may succeed in unearthing every grain of knowledge required to present a most practical and valuable report, but will fail to achieve its objects if it does not secure the co-operation of every intelligent person whose duty will be to carry out carefully the recommendations and to impart them to others so that in time everyone will begin to take an interest in the care of his own body with the same degree of earnestness as the garden boy displays in his master's new motor car.

To those who will be inclined to minimize the magnitude of the task of convincing the masses that the time has arrived when we can no longer expect to live healthy lives or to maintain a higher standard of living except we exercise greater care in what we eat and drink, the following extract from a speech by Herr Hitler, which referred to the German people, should convince anyone that our task is a very hard though not unsurmountable one.

This is Hitler's statement about Propaganda:—

> "The purpose of propaganda is not to entertain nor to present current novelties to snobbish fops, but to convince—especially to convince the masses. But the slow-witted masses always require a certain length of time before they are able to grasp even one idea. The simplest proposition must be repeated a thousand times before it will finally enter their consciousness.
>
> "In propagandizing, a variation in presentation must never alter the main features of the object to be attained. Each variation must always arrive at the same conclusion. Attention must, it is true,

be focussed on a slogan from several different angles, but the final result of each consideration must be to throw the slogan itself into greater prominence. Only in this way can and will propaganda have a unified and concentrated effect.

"This constant and unhesitating emphasis must never be abandoned. Only this general line of operation will pave the way to final success. Then, however, one will realize with amazement what tremendous and almost unbelievable results can be obtained through such persistence.

"All advertising whether in the field of business or politics, secures its effect through the persistent and undeviating unity of its application."

This shows how necessary it is to commence the propaganda with as little delay as possible. The Journal of the Jamaica Agricultural Society has on previous occasions drawn the attention of its readers to the large quantities of imported foodstuffs consisting of White Flour, Canned Meats, Canned and Pickled Fish, Cereals, Fruits and Preserves, Canned Vegetables and Dairy Products, along with a varied assortment of other commodities for which we have developed a craze to include in our diet. So lacking is our knowledge of the value of these foods, and so gullible we are to cleverly worded business propaganda containing mostly misleading and exaggerated information, that the sooner the searchlight of truth is directed to some of these, the easier it will be to fall in with the teachings of our scientific investigators. Due to a very peculiar turn of mentality it is regarded by the majority of the natives of this Island that any imported article bears a high standard of excellence as compared with similar items produced here Thus we will find among people who consider themselves very worthy individuals many who will strain their resources to buy imported vegetables, at the same time refusing to pay very much less for freshly gathered green vegetables which contain greater health-giving properties.

Any well informed person will also confirm the statement frequently made that Jamaica has the reputation among overseas suppliers of being a very cheap market. The grade of foodstuffs absorbed in this market is the cheapest and consequently more open to spoilage and adulteration than is the case of supplies intended for neighbouring countries who insist and are willing to pay for better quality. Through the courtesy of the Food Inspector attached to the Kingston and St. Andrew Corporation, I have been privileged to glance over the record of seizures of foodstuffs made in and around Kingston and which are destroyed on the grounds that they are unfit for human consumption. Mind you, if no seizure had been made, these items would very likely be included in the menus of people who claim to be possessed of average intelligence. That there is a good deal of contamination in groceries now being offered to the public is evident as a quick glance revealed seizures of barrels of Mackerel, Codfish, Potatoes, Onions, numerous quantities of Condensed Milk, Cocoa Powder, Flour, Grape Juice, Cooked Ham, Salt Pork, several tins of Tomatoes, Grapes, Soup, Green Peas, Peaches, Pears, Apricots, Sardines more frequent than all, Corned Beef, Lunch Tongues, Sausages and various other commodities. Think of conditions in other parishes where no food inspection is in force, and picture the shocking conditions that must exist where stocks move slower than in the city, and as a consequence are more liable to

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THE JAMAICA AGRICULTURAL SOCIETY, KINGSTON.

spoilage. Then consider the large quantities of bankrupt stock sometimes sold at one-quarter the invoiced prices and eventually being retailed at very low prices to people who dismiss the idea of danger in these foods with the well known Jamaican jest that "what is not killing is fattening."

With the view of disillusioning those who are not only content to swallow everything they read in the advertisements, but will go to the extent of impressing others with their views, I shall endeavour to throw some light on some of the malpractices of certain manufacturers whose motto is—make money; make it honestly if you can—but if not—make money!

An appropriate introduction would be to reproduce a news item appearing a few weeks ago as follows:—

INDICTED UNDER U.S. PURE FOODS LAW.

(Canadian Press by D.W.I. Cable Co.)

"Boston, Jan. 28.—The United States Grand Jury to-day indicted Wescoline Products Company Inc., of New York, and eight men for violating the Pure Foods Law in selling allegedly adulterated olive oil. The Assistant U.S. Attorney, Charles A. Rome, reported the Company had sold olive oil adulterated with tea and seed oil. Millions of dollars of such oil had been sold through the east, Mr. Rome said."

29.1.36.

It is sad to relate that occurrences of this nature have reached such proportions that a large force of Inspectors are kept working at high pitch under the Food and Drugs Administration Law in an effort to check this tendency to tamper with the purity and wholesomeness of processed foods.

So inadequate is this inspection that steps have had to be taken by a section of the community to have certain brands of foods analysed by capable chemists and their findings are communicated to the public. Some of these revelations which are of a startling nature will be communicated in due course, space allowing only a few general remarks this time.

A powerful organization representing several thousands of consumers is now in existence whose work consists of a never-ending series of tests on as many food products as it is possible to overtake and to publish the results to its members.

Their methods are direct and to the point. Let us suppose that Messrs. John Jones and Co. attempted to place a cheap brand of Rum on the market which was in some way adulterated, and was incorrectly advertised as pure Jamaica Rum. Sooner or later this rum would come under the scrutiny of the organization, and a report would be issued giving the truth to the public and naming the firm without hesitation as one that misled the public. This very organization has carried out tests of most of the brands of Rum offered to the public in the United States and Jamaica Rum heads one of the lists for purity and genuineness, while a well known Cuban brand of Rum received unfavourable comment because added ingredients were discovered.

In the face of this we should be satisfied with the fairness of the investigators who place the consumers' interest first, and do not care whom they hurt in the course of their self-imposed duty.

Investigation has brought to light the unpleasant fact that most

canned foods contain preservatives that are harmful to the human system. It is true that these substances are only present in small quantities, but the hazard to health is intensified by the presence of deadly poisons such as lead, arsenic, copper, selenium, manganese and other poisonous metals which find their way in through the process of canning. The great danger is that a long continued dosing of small amounts will accumulate in the system until one day trouble sets in and we begin to search in vain for the cause.

Toxicologists are beginning to suspect food poisoning as the root cause of many of the remote diseases and ailments that baffle the present day physician. Evidence has already been adduced to show that lead and arsenic have some connection with the incidence of Cancer and other diseases of "Civilization."

Lead is a cumulative poison. It stays inside you and accumulates from day to day as you eat lead-contaminated food, until your general health begins to fail or you suffer a mental breakdown. Or, it may manifest itself in vague or obscure ailments with symptoms which are mistaken for some other ailment. As no means have yet been devised which will eliminate the presence of these poisons, the authorities have had to make allowance for a "Safety?" margin. In the case of Sardines the U. S. Government placed a tolerance limit on lead of 2.6 parts per million, but when nearly 600 samples of the best sardines were tested it was found that in some cases the lead content was as high as 150 parts per million Canned Fish holds one of the worse records for Government seizures, within the past few years the number of tins of Salmon destroyed because they were found to be bad runs into millions. In a certain instance when a large shipment on its way from the factory was stopped *en route* and an examination made, the greater portion was found to be contaminated and unwholesome. The authorities, however,

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allowed the packers to take back the shipment under promise to sort out the good portion and recondition the doubtful lot. Who is to tell whether this packing firm, finding themselves faced with a big loss, did not immediately cable to Jamaica offering the consignment at a very advantageous figure, knowing how strong our sentiments run in favour of the imported foods and our fondness for cheap and second grade goods. It is not to be expected that the Inspection Authorities would offer much objection, with business as bad as it is, when the packers say to them—"Oh, we will sell it to the Jamaicans; they won't mind as long as we put on a nice attractive label and give it to them cheap."

Brief reference will now be made to some of the articles of food in which danger lurks, requiring much caution in selecting and care in handling.

Sardines.

When 600 samples were analysed and tested, it was found that a large quantity contained lead in dangerous quantities. It was proven that the source of contamination was the grills on which the sardines were cooked. Careless packing and sealing of the tins, also low-grade material employed in manufacture contribute their quota.

Here are two examples of hundreds of cases tried in the United States Courts and published in pamphlet form by the Department of Agriculture for general information.

"18149. Adulteration of canned sardines. U.S. v. 439 Cases of Canned Sardines . Default decree of condemnation, forfeiture, and destruction. (F. & D. No. 25143. I.S. No. 6058. S. No. 3395.)

The product herein described having been found to consist in large part of diseased fish, the Secretary of Agriculture reported the matter to the United States Attorney for the Southern District of Indiana.

On September 27, 1930, the United States Attorney filed in the District Court of the United States for the district aforesaid, a libel praying seizure and condemnation of 439 cases of canned sardines, remaining in the original unbroken packages at Terre Haute, Ind., alleging that the articles had been shipped on or about June 24, 1930, by the North Lubec Manufacturing & Canning Co., from St. Andrew, New Brunswick, in the Dominion of Canada, into the State of Indiana, and charging adulteration in violation of the Food and Drugs Act. The article was labelled in part: "Eagle Brand American Sardines x x x Packed by North Lubec Manufacturing and Canning Co., Factories—North Lubec and Stonington, Me."

It was alleged in the libel that the article was adulterated in that it consisted wholly or partly of a filthy, decomposed, or putrid animal substance; and for the further reason that it was the product of diseased animals.

On May 9, 1931, no claimant having appeared for the property, judgment of condemnation and forfeiture was entered, and it was ordered by the Court that the product be destroyed by the United States Marshal.

ARTHUR M. HYDE, Secretary of Agriculture.

17886. Adulteration of canned sardines. U.S. v. 189 Cases of Sardines. Default decree of condemnation, forfeiture, and destruction. (F. & D. Nos. 25167, 25168. I.S. No. 19651, 19652. S. No. 3388.)

Samples of canned sardines from the herein-described shipment having been found to contain diseased and decomposed fish, the Secretary of Agriculture reported the matter to the United States Attorney for the Northern District of Texas.

On September 23, 1930, the United States Attorney filed in the District Court of the United States for the district aforesaid, libel praying seizure and condemnation of 189 cases of sardines, remaining in the original packages at Dallas, Tex., alleging that the article had been shipped by the R. J. Peacock Canning Co., Lubec, on or about July 5, 1930, and transported from the State of Maine into the State of Texas, and charging adulteration in violation of the Food and Drugs Act. A portion of the article was labeled in part: "Admiral Brand American Sardines x x x Packed by R. J. Peacock Canning Co., Lubec, Maine." The remainder of the said article was labeled in part: "Sea Lion Brand Maine Sardines x x x Packed by Seacoast Canning Co. Eastport, Me."

It was alleged in the libel that the article was adulterated in that it consisted wholly or partly of a filthy, decomposed, or putrid animal substance; and in that it was the product of a diseased animal, namely, diseased and belly-blown fish.

On January 19, 1931, no claimant having appeared for the property, judgment of condemnation and forfeiture was entered, and it was ordered by the Court that the product be destroyed by the United States Marshal.

ARTHUR M. HYDE, Secretary of Agriculture.

Canned Salmon.

Millions of cans have been seized and destroyed during recent years, and prosecutions brought against offending Packing Companies. In many cases the contents were tainted and stale; some decomposed and adulterated and others falsely labelled as Salmon. This is one of a large number of cases recorded in the U.S.A. Courts of Justice.

18145. Adulteration of canned salmon. U.S. v. 1,252 Cases, et al of Canned Salmon. Consent decree of condemnation and forfeiture. Product released under bond. (F. & D. No. 25341. I.S. Nos. 1098, 1188, 1189, 1334, 1335, 1339. S. No. 3611.)

Samples of canned salmon from the herein-described shipments having been found to contain tainted and stale fish, the Secretary of Agriculture reported the matter to the United States Attorney for the Western District of Washington.

On November 25, 1930, the United States Attorney filed in the District Court of the United States for the district aforesaid a libel praying seizure and condemnation of 2,250 cases of canned salmon, remaining in the original unbroken packages at Seattle, Wash., alleging that on or about September 12, 1930, the article had been shipped in interstate commerce by from Karheen, Alaska, into the State of Washington, and charging adulteration in violation of the Food and Drugs Act. The cases containing the article were labelled in part: "Happy Vale Brand Pink Salmon." A portion of the cans were labelled in part: "Happy Vale Brand Pink Salmon, packed for Emery Food Co., Chicago, U.S.A."

It was alleged in the libel that the article was adulterated in that it consisted in whole or in part of a filthy, decomposed, or putrid animal substance.

On January 3, 1931, the Emery Food Co., Chicago, Ill., claimant, having admitted the allegations of the libel and having consented to the entry of a decree, judgment of condemnation and forfeiture was entered,

and it was ordered by the Court that the product be released to the said claimant upon payment of costs and the execution of a bond in the sum of $5,000, conditioned in part that the good portion be separated from the adulterated portion, under the supervision of this Department, and the latter destroyed.

ARTHUR M. HYDE, Secretary of Agriculture.

Canned Soups.

Canned Soups appear to afford the Food Chemist considerable scope to practise his art of "doctoring" up certain foods to tempt the palates of consumers. Some were found to consist of from 75 per cent. to 95 per cent. of water, and some "chicken" soups were found to contain mostly beef flavoured with chicken essence.

Some years ago that esteemed citizen, Mr. Eugene Finzi, surprised a Press Reporter who interviewed him on his return from a lengthy trip abroad by telling him that what he missed Jamaica for when he was away was her soups. He declared that he had never been able to get soup abroad which equalled the soup he got in Jamaica.

How strange it is to find as civilization progresses—that in Jamaica we are turning to canned imported soups which cost 20 times as much as Bread, based on relative food values, and are many times inferior to our own home-made soups.

Canned Fruits and Vegetables.

Many cases of food poisoning resulting in deaths have been traced to foods canned in canneries in recent years. A most virulent toxin known as the *botulinus toxin* has been discovered as a frequent cause of food poisoning. It is caused by the formation of poison by a germ which thrives in the absence of air in non-acid foods. So virulent is this toxin that it is calculated that only 60 lbs. of it would be required to destroy the whole human race. It can only be destroyed by vigorous boiling for 10 minutes while stirring.

Recently published reports have shown commercially canned spinach to contain botulinus toxin. Canned String Beans, Ripe Olives and Canned Sausage are especially dangerous. Corn, asparagus, beets, tomato catsup, pears and apricots are also risky. It is dangerous even to taste foods where the cans show any signs of bulging. Maraschino Cherries are so leached, bleached, coloured and artificially flavoured that they are described as uniformly unfit for human food. Potassium ferocyanmide is a new and dangerous drug used to clarify fruit juices such as bottled Grape Juice and certain wines.

White Flour.

In order to produce that snow-white bread so much desired here, the Flour has to be artificially bleached, aged, and "improved" by means of chemicals, one of which is caustic soda. The use of chemical improvers is banned in France, Switzerland and Denmark, which explains why the French peasants stick to their large coarse loaves which our soldier boys in France during the War termed "lorry wheels."

Dr. McCulloch told us in a lecture, reproduced in the "Gleaner" of 10.6.36, that blue was also added to white flour to make it white—just as we do when laundering clothes. He urged us to change over to Brown Bread if we valued our health.

Salt Fish.

During 1936 we imported 17,210,413 lbs. of Salt Cod Fish, valued at £170,990 and which retails at an average of 4½d. per lb. in Jamaica showing that no less than £322,695 is spent by the poorer classes on that one item alone.

According to Dr. McCulloch, the money spent to buy a pound of salt fish was practically wasted as its nutritional value was far below that of a pound of fresh meat.

Lean Fish as a source of energy is a poor food. It is better for our working classes to reduce their consumption of Cod and increase the use of herrings in their diet as analysis of both items gave only .74% of fat in the former as against 16.89% in the latter.

In view of the fact that Jamaica is to some extent regarded as a happy dumping ground for various classes of low-grade products, as recent discussions in our Legislative Council would indicate, it appears as if the need for caution in the consumption of canned and processed foods is more pronounced now that Diet and Nutrition has assumed the importance of an Empire issue.

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REGULATIONS FOR THE EXPORT OF UNMANUFACTURED TOBACCO.

(Reproduced from The Jamaica Gazette Extraordinary, Vol. LX., No. 13, Monday, February 15, 1937.)

The following Notification is, by command of His Excellency the Governor, published for general information.

C. C. WOOLLEY,
Colonial Secretary.

No. 111.—The Governor in Privy Council on the 26th January, 1937, made the following Order making Regulations under Section 13 of the Agricultural Produce Law 1926 (Law 19 of 1926) for the export of unmanufactured tobacco:—

I, the Governor in Privy Council in exercise of the powers conferred by Section 13 of The Agricultural Produce Law 1926 (Law 19 of 1926) and of every other power hereunto enabling do hereby make the following Regulations:

REGULATIONS FOR THE EXPORT OF UNMANUFACTURED TOBBACCO.

1. The Governor shall appoint an Inspector of Agricultural Produce (hereinafter called The Tobacco Inspector) to control the Government tobacco grading fermenting and packing station (hereinafter called "the Government Station").
2. No person shall export unmanufactured tobacco (in quantities exceeding ten pounds in any one calendar month) unless it shall have been first delivered to the Government Station and there subjected to such treatment as the person authorised to be in control of the said station may require.
3. It shall be lawful for the Tobacco Inspector to reject or decline to receive for preparation for export any tobacco which in his opinion is not of a nature and quality suitable for preparation for export or for any other reason is unfit for export.
4. Any person exporting, attempting to export or causing the export or attempted export of unmanufactured tobacco except in accordance with these Regulations shall be guilty of an offence against these Regulations.
5. The Tobacco Inspector may refuse to accept for preparation for export any tobacco leaf which is less than seven inches in length, damaged, discoloured, improperly or insufficiently cured, or in any way unfit in his opinion for export.
6. Any person growing tobacco for export shall furnish to the Tobacco Inspector on or before the 31st day of January in any Year an estimate of the total crop of air-cured tobacco suitable for export produced or expected to be produced from the land of such grower.
7. No person shall purchase or otherwise acquire from any other person for purposes of export any unmanufactured tobacco in whatsoever form except under a permit in writing first had and obtained from the Director of Agriculture who in his discretion may issue or refuse to issue such permit, provided that this Regulation shall not apply to the Tobacco Inspector who may purchase or otherwise acquire unmanufactured tobacco in

accordance with such conditions as may from time to time be approved by the Governor in Privy Council.

8. Any person delivering or desiring to deliver unmanufactured tobacco to the Tobacco Inspector for the purposes of preparation for export and export shall first notify the Tobacco Inspector in writing and shall thereupon deliver the tobacco in such quantities and at such times and in such condition as the Tobacco Inspector shall direct

9. Any person desiring to export unmanufactured tobacco in his own name or otherwise than through the agency of the Government Station shall give notice of his intention to the Tobacco Inspector on or before the 31st day of August in any year in respect of exports to be made during the succeeding twelve months and shall state the estimated quantities, grades, varieties, and marks and the name and address of the consignor or consignors.

10. Any person desiring to export unmanufactured tobacco otherwise than through the agency of the Government Station shall at or before the time of delivery of the tobacco to the Tobacco Inspector enter into an agreement in the Form A in the Schedule to these Regulations.

11. Any person growing or intending to grow tobacco for export and desiring that such tobacco shall be exported and sold through the agency of the Government Station shall enter into an agreement in the Form B set out in the Schedule to these Regulations.

12. No person shall export any unmanufactured tobacco unless it be contained n packages bearing the marks prescribed by these Regulations and accompanied by a permit in the Form C set out in the Schedule to these Regulations and signed by the Tobacco Inspector or other person authorised to sign such permit by the Governor.

13. Nothing in these Regulations shall be construed as affecting in any way any contract or agreement entered into between the Colonial Secretary and any tobacco grower under The Agricultural Loans Law 1887.

14. The following shall be the sizes grades and marks of unmanufactured tobacco for export:

Filler Tobacco:

Leaves under 10 inches in length may be stripped, at the discretion of the Tobacco Inspector and if so shall be designated "strip."

Leaves not less than 10 inches and less than 12 inches in length to be designated "No. 2."

Leaves not less than 12 inches and less than 14 inches in length to be designated "No. 1."

Leaves 14 inches and over in length to be designated "No. 1a."

Each case to be marked J F in a diamond and to be marked with the designation of the tobacco.

Binder Tobacco:

Leaves not less than 14 inches but less than 16 inches in length to be designated "No. 2."

Leaves not less than 16 inches but less than 18 inches in length to be designated "No. 1."

Minimum breadth of binder leaves to be three and one half inches for the half leaf.

£400

IN CASH PRIZES

IN

MACHADO'S

CIGARETTE

COMPETITION

SEE

HANDBILLS FOR DETAILS.

B. & J. B. MACHADO TOBACCO CO., LTD.

Each case to be marked J B in a diamond and to be marked with the designation of the tobacco.

15. All tobacco for export shall be packed in wood cases approved by the Tobacco Inspector and each case in addition to the marks prescribed in Regulation 14 shall be marked on one side "Empire Tobacco, Produce of Jamaica, B.W.I.," and shall bear a stamp or mark showing that it has been packed at the Government Station and stating the crop year.

16. "Unmanufactured tobacco" for the purpose of these Regulations shall mean cigar leaf tobacco in whole or stripped form whether subjected to any process of fermentation or other treatment or not which is intended for export for the purposes of manufacture in the United Kingdom.

17. Every person in any way offending against any of the above Regulations shall be liable on summary conviction to a penalty not exceeding Ten Pounds and in default of payment to imprisonment with or without hard labour not exceeding one month. All such penalties may be recovered in a summary manner before a Resident Magistrate or two Justices of the Peace.

Made in Privy Council this 26th day of January, 1937.

EDWARD DENHAM,
Governor.

SCHEDULE. I.

FORM A.

An Agreement made the day of between (hereinafter called "the Exporter") of the One Part and The Colonial Secretary of Jamaica (hereinafter called "the Colonial Secretary") of the Other Part Whereby it is agreed as follows:—

1. The Colonial Secretary appoints the Tobacco Inspector his agent and agrees to ratify and confirm all acts matters and things done or acknowledged by him.

2. The Colonial Secretary agrees to grade ferment pack and deliver to the Exporter all Cigar Tobacco delivered by the Exporter to the Tobacco Inspector and accepted by him.

3. On taking delivery of the tobacco from the Exporter the Tobacco Inspector shall cause the same to be weighed and on making delivery to the Exporter shall deliver to him the said tobacco properly graded fermented and packed and weighing not less than ninety per centum of the weight at the time of delivery to the Tobacco Inspector. It is acknowledged by the parties hereto that excess moisture damaged discoloured or small leaves and the presence of foreign matter will in the process of grading fermenting and packing cause a loss of weight.

4. The Exporter agrees to deposit with the Tobacco Inspector to cover the expenses of grading fermenting packing and insuring such sum calculated at the rate of four pence for each pound of tobacco delivered to the Tobacco Inspector. Such deposit shall be made on delivery of the tobacco to the Tobacco Inspector

or

The Exporter agrees to furnish to the Colonial Secretary good surety to cover the expenses of grading fermenting packing and insuring in such sum calculated at the rate of four pence for each pound of tobacco delivered to the Tobacco Inspector.

or

The Exporter agrees to pay to the Colonial Secretary the expenses of grading fermenting packing and insuring the tobacco delivered by him to the Tobacco Inspector and the Exporter further agrees that the Colonial Secretary shall have a lien on the said tobacco to secure the payment of the said expenses and it is hereby agreed and declared that in the event of the said expenses remaining unpaid for sixty days after the date of a written demand for payment sent by the Tobacco Inspector by registered post to the last known address of the Exporter the Colonial Secretary may sell the said tobacco and retain from the proceeds of such sale the said expenses of grading fermenting packing and insuring together with the costs of selling the same.

5. The Colonial Secretary within three months from the date of the delivery of the tobacco to the Exporter agrees to furnish him with a statement showing the gross weight of tobacco received the loss from moisture and other causes the nett weight of each grade and quality of tobacco prepared for export and of the costs of grading fermenting packing insuring and of all other charges incurred thereby and to refund to the Exporter the difference between the sum deposited in accordance with this Agreement (if a deposit is made) and the costs of grading fermenting packing and insuring.

6. The Exporter shall on delivering the tobacco to the Tobacco Inspector state in writing the amount of insurance he desires on the tobacco so delivered and in the event of the tobacco being destroyed by fire or other cause covered by the insurance the Colonial Secretary shall only be liable to the extent of the amount recovered under the policy of insurance

As Witness the hands of the parties the day and year first hereinbefore written.

Signed by the said:

In the presence of:

Signed by The Colonial Secretary of Jamaica in the presence of:

SCHEDULE II

FORM B.

An Agreement made the day of between (hereinafter called "the Grower") of the One Part and The Colonial Secretary of Jamaica (herein called "The Colonial Secretary") of the Other Part Whereby it is agreed as follows:—

1. The Colonial Secretary appoints the Tobacco Inspector his agent and agrees to ratify and confirm all acts matters and things done or acknowledged by him.

2. The Colonial Secretary agrees to properly grade ferment pack and sell to the best advantage of the Grower all tobacco delivered by the Grower to the Tobacco Inspector and accepted by him and to pay to the Grower the proceeds of such sale after deducting therefrom all costs and expenses of fermenting grading insuring shipping and selling.

3. It is acknowledged by the parties hereto that excess moisture damaged discoloured or small leaves and the presence of foreign matter will in the process of grading fermenting and packing cause a loss of weight.

4. The Grower shall on delivering the tobacco to the Tobacco Inspector state in writing the amount of the insurance he desires on the tobacco so delivered and in the event of the tobacco being destroyed by fire or some other cause covered by the Insurance the Colonial Secretary shall only be liable to the extent of the amount recovered under the policy of insurance.

5. The Colonial Secretary within 3 months from the date of the sale of the tobacco agrees to furnish the Grower with a statement showing the gross weight of tobacco received the loss from moisture and other causes the nett weight of each grade and quality of tobacco prepared for export and sold and of the costs of grading fermenting packing insuring transporting shipping and selling and of all other charges incurred thereby and of the prices received on the sale of the tobacco

Signed by the said

in the presence of:

Signed by The Colonial Secretary of Jamaica in the presence of:

Department of Science and Agriculture.

REGULATIONS FOR THE EXPORT OF UNMANUFACTURED TOBACCO.

FORM C

Permit to Export Unmanufactured Tobacco.

Permission is hereby given to (Name)

of (Address) for the export

of cases of unmanufactured Tobacco to the

United Kingdom by (Name of vessel) sailing

from (port) on or about (Date).

.....

Tobacco Inspector.

Kingston (Date).....19.....

USEFUL BOOKS FOR FARMERS

Principles of Veterinary Science—Hadley	...	...	22/-
Types and Breeds of Farm Animals—Plumb	...	...	22/-
Equipment for the Farm and Farmstead—Ramsower		...	20/-
Poultry Breeding and Management—Dryden	...	...	13/-
Principles of Agriculture—Bailey	...	...	10/6

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5. WE REPAIR the damage of accident or abuse which is a matter of PARAMOUNT IMPORTANCE.

When you consider the further fact that in purchasing our Tarpaulins you Provide Employment for many local people who badly need assistance, do you not think that you should make a resolution to purchase our Covers NOW AND FOREVER?

THE WHERRY WHARF,
102 Water Lane, Kingston

(Extract from The New Guinea Agricultural Gazette, October, 1936.)

REASONS ADVANCED FOR PROBABLE RECOVERY OR STABILIZATION OF COPRA PRICES.

1.—Concensus of Opinion in the Trade.

In recent reports the prominent firms in the trade have consistently maintained that the low-price levels prevailing for fats and oils in recent years is a thing of the past, and that prices should stabilize at a higher plane for some time to come. Examples of such firms are Messrs. Frank Fehr and Company (16, 17). Faure Blattman and Company (15), Laboucheres (32), L. M. Fischel and Company (32), and Harrops, Sydney (32), and several reasons have been advanced for this contention.

2.—General Economic Recovery.

The general economic position appears to be slowly improving, and with it confidence is increasing, while there is a clearer recognition of the greater development of international trade.

3.—No Excessive Stocks on Hand.

There is a general shortage of fats and oils in some of the principal consuming countries, apparently brought about by several independent causes which apply to all principal oil-producing materials. It is the prevailing opinion that this position cannot be remedied for some time to come.

It has been stated that the whale oil stocks which often amounted to 300,000 or 400,000 tons are practically all consumed, and that practically the total 1935-36 production has already been passed on to the consumers.

It must not be overlooked that there is always a hidden reserve for export in the quantity consumed locally, and that higher prices will draw upon what is usually domestic supply.

4.—Restriction owing to Policy and Difficulties in Exchange.

It is stated that until recently countries in Europe, such as Germany and Italy, only bought limited supplies of fats and oils, and that supplies are very light where there has been stringent financial control.

This is taken to indicate that several refineries and soap factories have been rendered idle. Germany is said to have previously made large purchases of whale oil, and because of her policy to reduce exports her supplies of vegetable oils are now reduced below minimum. It is concluded that at some time this shortage must be remedied.

5.—Natural Causes.

(*a*) Drought in America. This led to a general shortage in hogs and lard. The numbers of hogs on hand are the lowest for 30 years (17) representing in the spring season of 1935 a reduction of 19.6 per cent. over 1934, and a 40 per cent. reduction over the 1933 season. The drought, together with a restriction of crops (which are said to be 30 per cent. below normal), has led to a shortage of cotton seed oil. It

has also led to a shortage of oil cakes for cattle-feeding. Canadian soap manufacturers have been drawing on the limited supplies in the United States of America during this period, and this should lead to increased buying from outside sources. North America is now making urgent inquiries for vegetable oils in bulk, but shippers are unable to supply important quantities.

(*b*) Butter supplies have been reduced, and on account of small arrivals in England prices of New Zealand and Australian butter have risen. According to Frank Fehr (17) the price of spot New Zealand butter in October, 1935, was 127s. per cwt., compared with 112s. a month previously, and 72s. at about the same time in the previous year.

(*c*) Typhoons in the Philippines at the end of 1934 are reported to have seriously damaged the palms and young nuts.

(*d*) Shortage of groundnut supplies. This is said to be in the vicinity of 40 per cent. in India (15, 16, 33), and there is also a heavy reduction in the newly developed West African supplies.

(*e*) Soya bean crop. This is reported to be below average for the last two years, mainly owing to adverse weather conditions which have led to a shortage of 1,000,000 tons.

(*f*) A malaria epidemic in Ceylon. This occurred in the coco-nut producing areas, and considerably interfered with harvesting, copra-drying, &c. There was also an abnormal drought in Ceylon in 1934, and shipments in August, 1934, were 36.6 per cent. below the shipments of 1935, in combined value in terms of nuts of all copra produce.

(*g*) A considerable reduction occurred in the Argentine linseed crop and the production of olive oil was also reduced owing to unfavourable conditions. This has led to the formation of the Argentine Grain Regulating Board to protect farmers, which has resulted in a decided advance of prices of wheat, linseed and linseed oil.

6.—Margarine Manufacture Increased.

Owing to reduced supplies of butter at higher prices and other obvious causes such as the reduction in the amounts of other suitable oils forthcoming, according to *The Weekly Dairy Produce Notes* (quoted 17), margarine manufacture has increased in the United Kingdom 15 per cent. over the corresponding period of last year. This is also reflected in the increased imports of oils and fats, other than butter and lard, into England. According to Board of Trade returns (17) the imports January to September, 1935, were 640,370 tons, as against 553,388 tons for the same period 1934. At the same time, imports of butter and lard decreased by over 15,000 and 45,000 tons respectively.

7.—Reduced Exports.

Reduced exports from the Netherlands Indies, the largest exporting country, have occurred.

8.—Regulation of Whaling.

Regulation of whaling by the Norwegian Government and related interests. The period of catch has been reduced to the shortest on record; the seamen have been granted higher wages, and it is thought that the whalers may not have time to fulfil the reduced quota allowed. Reports from the Antarctic indicate that the whale catches are only very moderate.

9.—Reduction in Planting Coco-nuts.

It is anticipated that world planting of coco-nuts will be practically discontinued for a considerable time. Low prices during the last few years have necessitated economies on the plantations, hence a cut down on capitalization duties and charges which affect the coco-nut industry can be expected.

10.—Indian Position. (6)

India, the largest coco-nut producer in the world, is using all her own supplies, and the quantities used for internal consumption are continually on the increase. This has led to the gradual absorption of Ceylon supplies, and it is practically certain that eventually India will need all the Ceylon copra, and at the present time Ceylon copra is unavailable on the world's market, even at a premium of £4 per ton over all other copra. This contention is borne out by the fact that Singapore has now an increasing export of coco-nut oil to India which is causing a premium for Malayan F.M.S. copra.

Commencing from the 1st January, 1932, there was reduction in the Indian import duties on Ceylon copra of £1 10s. per ton, and on Ceylon coco-nut oil of £2 per ton. India during the past fifteen years has found it increasingly difficult to maintain her independence of outside sources of supply

At one time Malabar copra was superior even to that of Ceylon. Her exportable surplus between 1909 and 1916 was about 28,000 tons per annum, but for the last ten years the exports from that source have ceased entirely.

The Director of Agriculture, in the course of his recent tour, was informed that the development of an intense national spirit in India has greatly influenced the local milling of copra which it is impossible for the local supplies to meet. It is intended to increase the local production as much as possible to try and meet this demand.

The possibility for expansion of the planted areas in India are not known here, but it is believed that any increase from this source will not approach the increasing demand. In any case the effects of such plantings will not be felt for another eight or ten years.

The increased Indian demand for Ceylon and Straits copra is due chiefly to the high prices ruling for Malabar copra. The *Ceylon Trade Journal* (6) states that rightly or wrongly the opinion is gaining ground in India that Indian oil mills should be exclusively fed by Indian-grown copra. The result is a persistent cry against Ceylon copra, and the root of the trouble is evidently a mixture of protectionist and economic nationalism. It is shown in another place, however, that the Ceylon copra absorbed by India exceeded over 80 per cent., which was an increase of 21 per cent. compared with a year ago.

11.—Philippine Supplies.

Frank Fehr, in their 1933 annual report (16) stated "that Philippine exports to Europe had increased 125 per cent. over the year 1932," a fact which led to much consternation on the market. Since then, it appears that these supplies were not sold in Europe as readily as was anticipated. One reason was the greater tendency to discriminate in favour of higher quality copra in periods of low prices.

12.—Glycerine as a War Commodity.

Copra is the best source of the by-product glycerine from soap manufacture. The use of glycerine in explosives led to increased imports into Italy at the commencement of the Abyssinian war. Owing to war circumstances, Italy is having difficulty in obtaining direct supplies, although a heavy import through France is reported.

On the 18th November, 1935, sanctionist countries, such as France and the British Empire, prohibited exports to Italy.

PERMANENCY OR OTHERWISE OF HIGHER PRICES AND NECESSITY FOR CAUTION.

The present partial recovery in the copra market may, or may not, be permanent, as a number of causes could influence the trend of prices in the future.

Mr. James Burns (5), in reporting on the year's operations of Burns Philp and Company Limited, stated, "That the outlook for the ensuing year is much brighter, but everything will depend on whether the improvement in the market can be maintained." It is not possible to forecast whether the improvement in prices is permanent or not, but despite the reasons tabulated as to why the copra market should improve, there are several potent reasons why people interested should not be over-optimistic. The immediate future is reassuring, but one cannot vouch for the prospects in the distant future.

Our present director, in a memorandum dated 16th April, 1934, referred to a communication from the Director of Agriculture in Ceylon, who stated, "it is feared that the restricted potential production of whale oil is a big shadow overhanging the industry, because if prices of vegetable oils rise, animal oil will then come forth as a counterbalancing influence."

There is no reason why this should not also be true of the restriction operating on cotton production in the United States of America.

Under present circumstances there is no danger of the lifting of such restrictions affecting the prices in the near future.

It must be recognized that apparently a very unusual set of circumstances, all of which occurred about the same time, was responsible for the present shortage of fats and oils followed by a rise in prices.

The effect of Copra Inspection on the Premium obtained for Rabaul Hot Air over South Seas Sun-Dried Copra.

From January, 1931, until December, 1933, the highest premium obtained according to London prices, was 5s. per ton, while most of the time it ranged around 2s. 6d. per ton. Since that time the premium or difference between prices for Rabaul Hot Air and South Sea Sun-dried has fluctuated widely and ranged from 7s. 6d. to 25s. per ton.

In January, 1933, the premium stood at 7s. 6d. per ton.

In February, 1934, the premium stood at 12s. 6d. per ton.

The following figures indicate the wide fluctuations in the premium obtained for 1935:—

	s.	d.
March 1st	10	2
March 29th	17	6
April 5th to June 14th ...	22	6
May 17th	12	6
June 26th	20	0
August	25	0
November 1st	22	6

The average premium from January to November, 1935, was 16s. 3d., and on the 29th December quote, the difference in price stood at £1 7s. 6d. and varied around £1 2s. 6d. for a considerable period. In May this marginal difference had dropped to between 12s. 6d. and 15s.

Despite the marked fluctuations shown in the price differences between Rabaul Hot Air and South Seas Sun-dried, it is readily seen that the former is accepted on the market as a superior product and that the buyers on the average are ready to pay almost £1 per ton more for this copra. This can be accepted as the tangible result of the system of copra inspection in vogue and to the efforts of the planters to improve their copra.

Manufacturers' Requirements (29, 37, 38).

The following points are said to be taken into consideration by dealers in allotting the prices to be paid for copra required by oil mills:—

(1) Dryness.
(2) Absence of immature pieces of copra.
(3) Absence of smoke or colour.
(4) Large pieces required with little dust.
(5) Absence of foreign matter of any kind.

Copra with from 6--20 per cent. moisture content has to be sun-dried on concrete before milling, and it is dried to 5 per cent. moisture content, otherwise it would clog the machinery. The copra is then crisp, emits a characteristic squeal when pressed and shows absence of opacity.

Originally wet, white copra will generally arrive at the mills in a deteriorated condition, while the excessive moisture is often allowed for by a graded system of discounts depending on the moisture content.

According to Passmore (29) manufacturers in England generally buy on the basis of quantity and quality of the copra as received, so that the material losses resulting from deterioration and the expense of refining to eliminate free fatty acids, smell and dsicoloration, are borne by others.

British manufacturers of edible coco-nut oil require copra that is clean and dry with a high oil content and a low acidity.

Passmore also states that the manufacturing firms are largely indifferent to the causes which depreciate cured copra for the following reasons:—

(1) There is sufficient good quality copra produced to meet their requirements.
(2) No large stocks which might deteriorate after purchase are kept in England.
(3) Manufacturers pay for delivered weight only.

(4) If copra is not up to the standard an allowance is claimed by arbitration, whereas should it be above standard no more than the agreed price can be demanded by the seller.

Only firms of oil crushers who buy South Sea copra exclusively were in favour of investigations on the causes for depreciation of cured copra. It was also stated that this class of produce is generally of low standard and that the expressed oil must often be subjected to refining processes to eliminate free fatty acids, smell and discoloration, in order to render the oil fit for edible purposes.

Oil from top grade copra needs less refining than low grade oil, and whether the higher costs of refining low grade oil are balanced by the lower price is problematical. Refining costs are difficult to determine owing to the time and trouble involved in the process.

Representatives of shipping firms engaged in the copra trade of the South Seas would welcome any investigations which might lead to the betterment of this produce; the premium for good copra is comparatively small but the price of all copra is rather low, so that it is felt that efforts to improve the lower grades are worth while providing no great expense is entailed.

Cases of inferior quality can always be traced to causes in the country of origin except in such instances as sea damage, which is also of too frequent occurrence in New Guinea owing to insufficient care in transhipping.

The price of different grades of copra is based upon the average standard exported from each country of origin, as is shown by the order of the relative market value of each grade of copra from the various exporting countries at any particular time.

Owing to recent co-operative effort on the part of the local producers, Samoan and Rabaul copra is quoted separately and above South Seas copra, while the bulk of South Seas copra is still recognized on the English market as being of the lowest quality.

According to Passmore (29) and Ward and Cooke (38), the main causes of the depreciation of cured copra are:—

(1) Storage of the coco-nut and meat before preparation, when it is vulnerable to the action of micro-organisms, chiefly bacteria.
(2) Insufficient drying during preparation, leaving a moisture content capable of sustaining mould growth.
(3) Insufficient country storage after drying when copra is unprotected from rain.
(4) Careless methods of preparation, insufficient drying, the practice of blending poor with good copra before shipment (but not the climatic conditions) are other factors responsible.

Investigations in Malaya and Ceylon indicate that wet coco-nut meat and partially dried copra are always liable to serious bacterial attack, which causes at first a pale yellow, gummy slime to which dirt and pieces of husk readily adhere and smoke depositions occur during drying. The resultant copra when dried has a pale yellow to dark reddish brown discoloration according to the degree of bacterial action; such discoloration is often seen in New Guinea copra. De Fremery (11) concludes that all degeneration by bacteria causing deteriorated and softened copra is a factor of great importance as regards the susceptibility of copra to insect attack.

Prevention of bacteria attack on copra is possible by making the time between splitting the nuts open and applying the heat as short as possible, not overloading the drier and giving free circulation of air.

Rabaul Hot air Copra.

Table No. 16.—Value per Ton (in (£ s. d.) London Prices.

Year.	Jan.			Feb.			March.			April.			May.			June.			July.			August.			Sept.			October.			Nov.			Dec.			Average price for year.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1923 ..	25	0	0	26	5	0	29	0	0	25	15	0	27	5	0	26	15	0	24	5	0	25	0	0	26	15	0	26	15	0	26	15	0	26	10	0	26	6	8
1924 ..	28	0	0	26	15	0	27	0	0	25	15	0	25	0	0	25	5	0	26	15	0	26	15	0	27	10	0	27	10	0	28	15	0	28	15	0	26	19	7
1925 ..	27	15	0	27	10	0	26	10	0	26	10	0	27	15	0	27	15	0	27	15	0	30	10	0	30	10	0	30	0	0	30	0	0	29	15	0	28	10	5
1926 ..	27	15	0	27	5	0	28	5	0	28	0	0	27	10	0	28	0	0	26	15	0	27	5	0	27	5	0	25	15	0	26	0	0	24	15	0	27	1	0
1927 ..	25	7	6	25	10	0	25	5	0	25	5	0	25	15	0	25	10	0	25	0	0	25	7	6	26	0	0	26	15	0	27	5	0	26	15	0	25	16	3
1928	27	10	0	26	15	0	26	15	0	27	0	0	26	15	0	26	7	6	26	0	0	25	0	0	24	15	0	24	15	0	24	15	0	24	0	0	25	17	3
1929	23	10	0	23	5	0	22	7	6	22	5	0	20	10	0	19	15	0	22	0	0	21	12	6	22	10	0	21	10	0	21	5	0	21	10	0	21	16	8
1930	21	10	0	21	0	0	20	0	0	21	15	0	20	7	6	18	10	0	8	3	0	16	12	0	15	16	6	15	3	0	15	13	0	15	4	0	18	2	9
1931	14	4	6	14	7	6	14	13	0	14	2	6	12	13	9	10	19	6	12	2	6	11	4	4	10	18	6	12	3	3	13	4	0	14	1	3	12	16	3
1932	14	8	9	16	1	0	16	5	0	14	6	10	14	0	6	12	18	2	13	8	9	13	14	6	14	2	6	14	3	0	14	5	0	14	2	0	14	5	10
1933	13	7	0	12	1	3	11	10	0	10	11	0	10	11	6	11	2	0	10	16	6	10	10	0	9	14	6	9	2	0	9	3	0	8	6	3	10	11	8
1934	7	16	6	7	14	0	7	18	9	7	18	6	8	9	4	8	13	9	8	15	7	8	18	2	8	18	6	9	0	0	8	15	7	9	9	0	8	10	8
1935	11	11	3	12	12	6	12	0	0	12	0	0	12	13	9	11	19	4	10	10	6	10	13	9	10	11	6	13	3	9	14	0	7	14	6	3	12	3	7
1936	15	6	3	15	1	10	13	14	0	13	10	7	12	12	4	13	2	6	13	18	2	14	10	6	..			.			.			..			..		

In practice the time between splitting and drying can be lessened by numbering the copra bags given to the copra cutters; if is thus possible to check which are the first bags brought in and these must be dried first. Walker (37) concluded from his investigations that rancidity of coco-nut oil is mainly due to fungi and that, owing to insufficient moisture, bacterial action is not important in this respect, and that copra containing less than 20 per cent. of water is practically free from bacterial action. Malayan investigators say that he has not placed sufficient emphasis on bacterial action (see above). He also concluded "that if copra is properly prepared in the first place, that is if it is dried out to 6 or 7 per cent. moisture content, it is safe from mould attack as long as it is kept dry." According to Corbet, Malaya (10) and other investigators, a low moisture content is also corrected with practical freedom from insect attack under storage conditions and well-prepared copra rarely deteriorates owing to this cause.

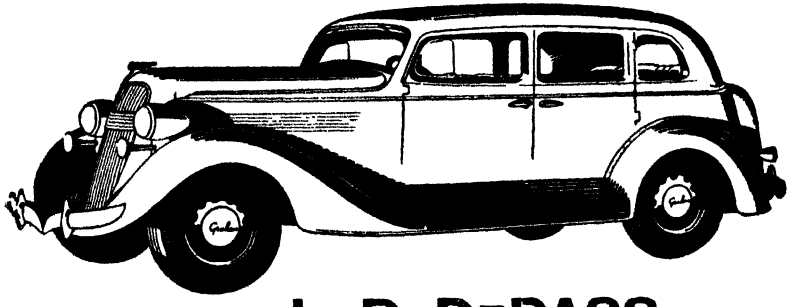
Observations in Malaya indicate that serious attack by mites usually commences when the moulds are no longer active. They destroy the web, break down small, irregular pieces of copra and so are largely responsible for the production of dust.

Cooke (8) shows that in one year's storage good copra lost 8 per cent. of its dry weight and commercial copra about 30 per cent. mainly through insect attack.

Graham

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6A & 68 King Street, Kingston.

CORONATION.

We have much pleasure in publishing the following, which was sent to us:

EDITOR.

Home and Overseas Press Services, Ltd.,
2-4, Cockspur Street, London, S.W. 1.
5th February, 1937.

The Editor:

Dear Sir,—At the request of the King George's Jubilee Trust Fund, St. James's Palace, I am sending you herewith a complimentary story on the Coronation Programme, which you may like to use.

If at all possible, a voucher copy of any issue in which this little story may appear—in whole or in part—would be immensely appreciated.

Yours very truly,
(Sgd.) P. J. FIELD.
News Editor.

The special Overseas Edition of the Official Coronation Programme went to press this week-end.

Although it is still three months before the date of the Coronation, it was necessary to go to press thus early in order that copies of the Programme might reach the furthermost parts of the British Commonwealth in good time.

The Programme, which has been produced by King George's Jubilee Trust, is a complete and authoritative guide to the Coronation. There has never been any programme of the kind before—except that produced by the Jubilee Trust for the celebrations of the Jubilee of King George V. It is printed in two colours, and the cover, which bears the Royal Coat-of-Arms, in four colours. On the Title Page are represented the Coat-of-Arms of the United Kingdom and Dominions, the Badges of the Crown Colonies, and every part of the world where the King's writ runs.

Mr. John Masefield has written for the Programme "A Prayer for the King's Reign" in characteristically sympathetic vein.

This is followed by special photographs of the King and Queen, of Princess Elizabeth and Princess Margaret, and of Queen Mary. There are also a Genealogical Table, showing the descent of the Sovereign from Norman times; an account of the life of His Majesty King George VI; and an article on "The King's Maejsty," in which Mr. John Drinkwater explains the new significance that the Coronation has for the British Commonwealth since the passing of the Statute of Westminster.

The Coronation Procession, which will unite representatives of all parts of the Commonwealth in symbolic homage to the Throne, is fully described and illustrated. The British peoples oversea will be able to follow it at every step on the pictorial map drawn for the Programme by Mr. Basil Macdonald Gill.

The Coronation Ceremony is described by Garter Principal King of Arms and illustrated by photographs of the Regalia. The Coronation Service, which incorporates some of the most beautiful of English Church litanies, is given in full. It is introduced by the Archbishop of Canterbury.

The Duke of Gloucester has contributed a Foreword, in which he points out that, with modern methods of transmission, the Programme will enable people in all parts of the world to follow the Coronation Ceremonies as they have never been able to do before.

The Coronation Programme will be on sale on April 23rd, price 2/- or the equivalent in local currency.

Orders for more than half a million copies have been received from all over the world. A feature of these orders is the number of copies which are being bought for presentation to schools, hospitals and other public institutions. In addition, many business houses are buying large numbers of copies for distribution to their staffs.

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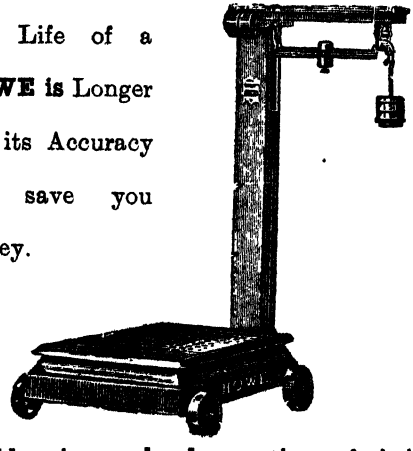
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THE CONTROL OF INSECT PESTS BY MEANS OF INSECTICIDES.

(*By W. H. Edwards, D.I.C., F.E.S., Government Entomologist, Jamaica.*)

(*Continued from the Feb.-March 1937 Journal.*)

Lettuce.

Young seedlings attacked by Cutworms: Water with Cheshunt Mixture.

Leaves resting on the ground and sometimes the stem near the roots chewed by darkish caterpillar-like organisms which possess hundreds of legs and crawl over the ground. These are not insects but millipedes.

Roots and lower part of the stem chewed by white grubs.

Dig around the attacked plants and destroy the grubs. As a deterrent against such pests the soil of beds in which delicate vegetables such as lettuce are grown should, prior to planting, be soaked with Jeyes-Kerosene Emulsion 1 part in 100 parts of water. See p. 430 of the August, 1936 Journal. In case of severe infestation whilst the plants are growing, Jeyes-Kerosene emulsion 1 part in 100 parts of water can be applied to the soil around the plants. See p. 431 of the August, 1936 Journal.

Mango.

Leaves taking a rusty appearance and young shoots dying as if burnt. On closer examination minute insects (thrips) are found on the underside of the leaves.

Spray with Lime Sulphur or with an Oil emulsion. See pp. 355 of the June-July, 1936 Journal and 430 of the August, 1936 Journal. These also act as scalicides, mango being frequently infested by scale which causes the growth of sooty moulds.

Sweet Potato.

Apply for Departmental Publication on "Insect Pests of Sweet Potato and of Cassava in Jamaica."

Strawberry.

Plants cut off below ground and pulled down in the soil by Crickets.

Dig the soil near the entrance of the tunnels made by the pest and destroy the crickets captured.

Broadcast the poisoned bait, mentioned on page 514 of the September 1936 Journal, thinly between the plants. In case of severe infestation also place about a teaspoonful of the bait in a circular trench dug about one inch deep and three inches away from the stem of the plants and cover up with soil.

TOBACCO.

Ants raiding the Seed beds.
Use Jeyes-Kerosene Emulsion 1 part in 100 parts of water and treat the nests as described.
Plants cut down by Cutworms. Use poisoned bait. See p 514 of the September, 1936 Journal.
Leaves eaten by Caterpillars. Spray with Arsenicals. See p. 353 of the June-July, 1936 Journal.
N.B.—Hornworms can be easily controlled by Hand Picking.

TOMATO.

Seeds and seedlings destroyed by Ants.
Cutworms.
Millipedes.
Flea Beetles and Hornworms.
Aphidis or Plant Lice. See p. 430 and 433 of the August, 1936 Journal.
Fruit Worm. See Journal of the Jamaica Agricultural Society, Vol. 39 p. 565.

(*b*) *Common Pests and How to Control them.*

ANTS.

One of the most destructive species among these elusive raiders is the Fire Ant: *Solenopsis geminata.* It nests in the ground, building extensive pathways radiating in all directions; its trails when running on the surface of the ground are often very conspicuous.

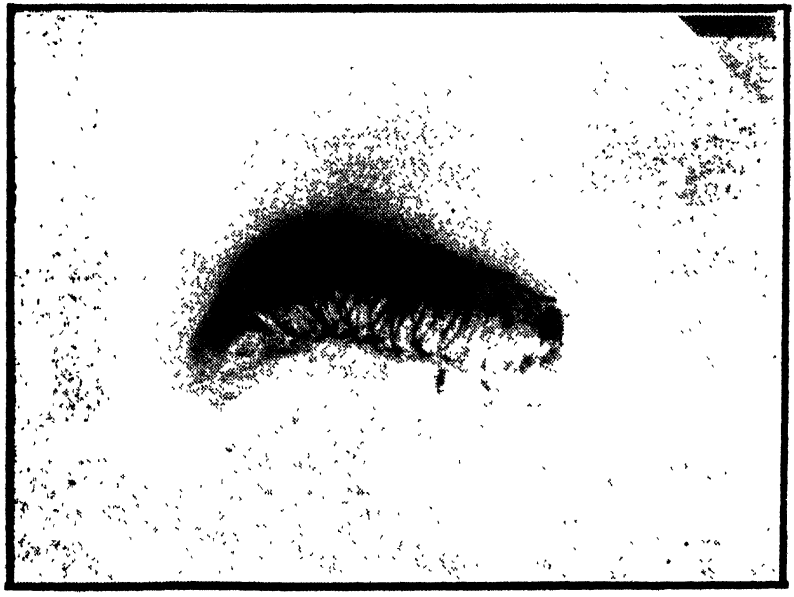


Fig. 8.—White Grub.

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LIMAX prevents damping-off.

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AGENT

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An observer watching the activities of these ants along a trail leading to a seed bed will see them carrying seeds wholesale to their formicaries. A single nest of these ants near a nursery is often the cause of serious losses as those ants though individually small are gross feeders, able in a short time to carry off a considerable number of seeds and young seedlings.

The methods of control described hereunder can be easily applied by any one; they are simple in application and will be found very efficient.

Ants live in colonies, each nest or formicary containing one or several queens who lay the eggs, and of thousands of workers of different castes. In the community each caste performs well defined duties. The queen being fed and cared for by the workers, usually remains in the inner chambers of the nest, seldom leaving it except at times when the colony migrates to a new location.

At certain times of the year, winged males and young females leave the nest and swarm.

After mating, the fertilized females retire to suitable locations to start new colonies. From the eggs laid by the young mother, larvæ are hatched which she feeds until they are full grown. These first offspring develop into workers which, as soon as they can do so, start to collect food for the younger members of the family and also for the mother who from then does no more work but spends the rest of her life, which may extend over several years, laying thousands of eggs from which workers and later other females and males emerge.

As their nests are easily rebuilt when broken, and as each female is continuously laying large number of eggs to replace the individuals which die it is obvious that the destruction of wandering workers or the breaking of nests does little to check such prolific insects.

To control ants it is therefore always necessary to destroy the laying females or queens and this can only be achieved after the nests have been located. The nests can be located by following the trails of workers seen carrying food to the community. When the galleries are not apparent an efficient method for detecting a formicary is to lay on the ground baits such as bones of fish and fowl, or honey and observing the direction taken by the ants which are attracted thereby.

Destruction of Ants nests situated *around* the seed beds by means of:

(a) Hot Water:

Once the formicary is found, if it is situated on a bare plot of ground, under stones or if in a wall, it can be easily and cheaply destroyed by pouring boiling water into it until the ground is thoroughly soaked.

(b) Sodium or Potassium Cyanide:

A solution of Cyanide of Potassium prepared by dissolving one ounce of the salt in one gallon of water and poured into the nest until the ground is saturated, is also efficient.

Destruction of Ants nests situated *near or amidst* the seedlings:

The method mentioned above cannot be applied when the formicaries are near to living plants as those would be killed by the insecticides. To destroy formicaries situated in flower beds, in lawns, etc., excellent results have been obtained by the author by the use of a diluted solution of Soap-Kerosene-Creoline emulsion which does not injure the vegetation.

The Stock emulsion which can be preserved for a long time is prepared as follows:—

Soap (ordinary hard soap)	...	...	...	3 ozs.
Kerosene	...	...	...	1 Quart.
Water	...	...	...	1 Pint.
Creoline, Jeyes or Carbolic Acid			...	1 Pint.

The soap is first dissolved in boiling water, the kerosene is then gradually added a little at a time, churning violently all the while with a paddle or large spoon until a creamy liquid results. The creoline which can be replaced by an equal amount of Crude Carbolic acid or of Jeyes fluid, is then added and the whole mixed.

For use in seed beds immediately prior to planting or germinating seedlings, one part of this stock emulsion is diluted in 100 parts of water. On more resistant plants whose radicular systems have to be treated and on lawns the insecticide can be used at twice that strength.

To destroy an ants' nest with any of the liquids mentioned above, it is important first of all to pour the hot water or the insecticide in a circle at the periphery of the formicary; when the soil all around has been well soaked and all exits for the broods thus closed, a few water cans of the liquid are then poured in the centre of the nest where the young broods and gravid females live.

(c) Fumigation with:

1. Carbon disulphide:—By injecting in formicaries substances which emit poisonous gases or fumes which diffuse in the galleries and cells of the nest, all the members of an ant community can be rapidly destroyed.

 When no delicate plants are in the immediate vicinity of the formicary, carbon disulphide can be used for that purpose. The insecticide is applied by punching into the soil, in and about the nest, holes 8 to 12 inches deep and about the same distance apart. About one tablespoonful of Carbon Disulphide is then poured into each hole whose opening is immediately choked with a handful of moist earth.

 As Carbon disulphide presents the disadvantage of forming a highly inflammable and explosive mixture in the presence of air, care must be taken not to light a cigarette or approach a light where this chemical is stored or being used.

2. Hydrocyanic Acid:—Calcium cyanide in the dust form can also be used for the destruction of ants nesting in the ground; it has the advantage of being less toxic to plant life than Carbon disulphide. Holes are made in the nest as explained for Carbon disulphide and about half a teaspoonful of Calcium Cyanide is poured into each hole the entrance of which is then closed with soil or dirt.

Protection of seed boxes from attacks by Ants.

When seeds are sown in boxes, as they ought to be in localities where ants abound, effective protection against those destructive raiders can be obtained by placing the seed boxes on stands isolated from the ground.

The stands can be easily constructed with bamboo stems placed horizontally on short cross bars supported on legs as shown in the figure hereunder. The legs supporting the structure can be isolated from the ground by immersing their lower ends in water contained in tins such as can be obtained by cutting kerosene tins in two parts, a little kerosene oil being poured on the water.

When the legs of the stand have to be buried in the soil ants can be prevented from reaching the higher parts of the structure by wrapping around the legs at a height of about six inches above the ground, bands of cotton fabrics soaked in a solution of corrosive sublimate or smeared with repellent greases prepared as mentioned hereunder or with Tanglefoot of the proprietory banding materials now found on the market.

Rosin-Linseed Oil-Castor Oil Ant Repellent.

A cheap non-poisonous preparation which when used on posts supporting seed boxes keeps its adhesiveness over relatively long periods is prepared by dissolving about 2 lbs. ordinary rosin in two quarts of boiling castor oil and raw linseed oil mixed in equal parts. When the mixture has been well boiled, air is blown through the hot solution until it cools at atmospheric temperature.

The preparation is then painted around the posts in bands three or four inches wide.

Poisoned Castor Oil Preparation.

Melt ½ lb. of commercial rosin in 1 pint of hot castor oil. Whilst the mixture is cooling add a little at a time whilst mixing thoroughly, 2 ozs. of finely powdered Mercuric Chloride.

This mixture is more effective than the preceding, but it presents the disadvantages of necessitating the use of Mercuric Chloride, a highly poisonous substance, and of drying rather rapidly when exposed to the sun; it does not therefore keep its effectiveness as long as the Rosin-Linseed Oil-Castor Oil repellant.

It is applied painted around the posts in the same way as other grease banding materials.

(To be continued.)

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" " 4	...	...	10.2%— 20.4%—	10.0%
" " 5	...	...	8.0%— 16.0%—	16.0%
" " 6	...	...	7.0%— 24.0%—	10.0%
Nicifos No. 1	...	...	13.8%— 41.4%	
" " 2	...	...	17.9%— 17.9%	
" " 3	...	...	15.6%— 31.2%	
Nitro Chalk	...	...	N.15.5%—Carbonate of Lime 48%	
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THE REPORT OF THE JAMAICA BANANA COMMISSION, 1936.

(Continued from the March, 1937, Journal.)

(f) The Establishment of Direct Shipping Communication with United Kingdom under British Control.

The Imperial Economic Committee reported in 1926 (p. 250):—

"We recognise . . . that the Jamaica Producers suffer from an undoubted disability in the fact that they are unable to ship their fruit by a "free" line to the United Kingdom for marketing through independent channels."

It appears to have been strongly felt in the Island about this time that the creation of a "free" line from Jamaica was necessary not only as a weapon in dealing with the competition of the powerful United Fruit Company, but on general grounds in the interests of the trade of the Island. The evidence we have received shows that this feeling still predominates and is held by interests wider than the Banana industry.

Witnesses have informed us that before the establishment of the present Direct Line of Steamships, importers were served by a number of shipping lines calling at Jamaica. There was, however, no regularity in their schedules, and sailings were sometimes a month or six weeks apart. Owing to calls at intermediate ports the voyage between England and Jamaica sometimes took 25 days.

Elders and Fyffes have for many years operated ships carrying bananas and passengers directly from Jamaica to England, but their service was not available for produce other than their own, and they did not carry ordinary cargo from England to Jamaica.

The Association's ships run to schedule, part of the year weekly and part of the year at intervals of ten days or two weeks.

Importers in the Island can therefore:

(a) Obtain quicker delivery of goods.

(b) Order goods in smaller quantities, thereby making finance easier, and reducing the necessity, cost and wastage of storing.

(c) Obtain direct from England goods which the ships are capable of carrying and which can be conveniently shipped from London, thereby reducing costs of freight and handling and risks of damage incurred by shipping via New York or other indirect routes.

Exporters from the Island of fruit and vegetables and other perishable produce have also derived benefit by:

(a) The ability to ship direct at regular and more frequent intervals, thereby reducing costs of storage and risks of waste.

(b) Reduction in freight rates on certain commodities such as Citrus and Coconuts.

The *Imports* carried by the Association's ships have amounted to:

1933	...	...	22,008 tons
1934	...	...	22,766 tons
1935	...	...	24,311 tons

The *Exports* other than bananas have been:

1933	...	...	4,718 tons
1934	...	...	6,881 tons
1935	...	...	7,006 tons

The Association's ships have accommodation for only twelve passengers—but to this relatively small extent they have added to the travel facilities between Jamaica and England.

The ownership or control of shipping facilities is essential to any concern carrying on a business in bananas from producer to wholesaler and the establishment of the Association's direct line was one of the necessary stages in the Association's organisation. The ownership of the line has cost the growers a considerable sum directly and indirectly. This cost was incurred for the sole purpose of providing refrigerated ships to carry on the banana business and its main object was not to benefit the general trade of the Island, but the extent to which the Island generally has derived benefit from the establishment of the line is a matter which has some relevance in considering the affairs of the Association.

Criticism of the Association.

Before passing to the finances of the Association we must comment on the various criticisms that have been submitted to us in evidence regarding its internal affairs.

Our attention was particularly drawn to the following points: —

(a) High prices were promised when the Association was formed and have never been realised. This fact is held by many to be sufficient excuse for passing fruit over the fence.
(b) Agents have been earning large commissions—in some cases very large—at a time when growers were getting low prices.
(c) Agencies are held by Directors.
(d) Agents receive commission on their own fruit.
(e) Some agents have received special concessions.
(f) The Managing Directors have been too highly remunerated.
(g) The Assistant Manager and Secretary are drawing salaries thought to be too high, and owing to the method whereby they are paid, are not sufficiently responsible to the members.
(h) Twopences have been deducted but have "evaporated." Doubt has even been cast on the ownership of ships.
(i) Members are inadequately informed of the Association's affairs.
(j) There is insufficient local contact between the management and members, and all complaints have to pass through Agents. Many Agents maintain little contact with members, although exceptions were mentioned.
(k) Resentment has been expressed at spying on members to discover evasion of contract.
(l) Money has been spent *ultra vires* by the Board.
(m) The office accommodation and warehouses of the Association are not identifiable as their own, but are associated in the public mind with those of other companies.
(n) The Association charges excessive freight rates for agricultural produce, especially citrus.

(o) It is generally believed that the marketing in England has been inefficient.
(p) Large growers are favoured by special price.
(q) Too much time has been spent in agitation, quarreling and abuse of competitors—too little effort in trying to work with other people.

Some of these opinions are perhaps unreasonable, but there is enough truth in many of them to warrant the careful attention of the management in whatever form the Association may continue. Many of the points are dealt with in other parts of this Report.

With regard to the promises of 1929, these were based on unduly optimistic forecasts, and though events have proved them both unwise and inaccurate, the Association was not alone in suffering a disappointment at the trend of prices during the succeeding years when most commodities suffered a fall.

We consider the criticism of the large commission earned by a few agents is valid. It is true that such agents are practically Branch Managers of the Association and that they incur heavy expenditure in their duties. Some of them have large businesses of another kind—this increases their efficiency as agents, but also reduces their essential expenditure. We believe they have done good service to the Association but we consider such service has been remunerated in certain cases beyond its value.

We recommend that:—

(i) Directors should not be employed as agents.
(ii) If agents are paid by commission, suitable adjustments should be made when they handle their own produce or that of large estates.
(iii) A drastic revision of the agency system should be undertaken forthwith, and wherever possible the agents remunerated by salary and their expenses carefully controlled by the Association.

We regard the incidence of agency charges of such importance that we have dealt with the subject more fully in Appendix F.

With regard to the Manaaging Directors' remuneration, Captain List and Mr. C. E. Johnston have expressly requested us to state our views frankly.

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We consider that the time has come when the commission of 1d. per count paid to the Jamaica Fruit and Shipping Company should stop and that the two Directors concerned should be remunerated direct by a salary.

We are not here attempting to evaluate the services of Captain List and Mr. C. E. Johnston. We think that their guidance has probably been the most important factor in the Association's history. They possess a signed contract but have already publicly offered to reconsider their remuneration. We believe that they have the Association's welfare truly at heart and that they will realise that any sacrifice that may be called for from them is based on the importance of restoring confidence in all aspects of the organisation.

The same remarks apply to the Assistant Managing Director and Secretary. At this time we think they should submit to a diminution of their salaries and that the whole of their salaries should be paid by the Association. In suggesting this we are not unmindful of the personal sacrifice involved nor of the value of their services.

The position of the members with regard to the deductions of the twopences and the full amount of capital expenditure incurred are dealt with in the next section of the Report. We have seen nothing in the nature of the expenditure to suggest that it went outside the ordinary discretionary powers of the Board.

The complaint regarding attempts to punish evasion of contracts is we think unjustified. So long as some members remained loyal at personal loss to themselves, we think the Association was perfectly correct in taking what steps it could to check repudiation. Such action was in the interests of the loyal members.

We do not attach importance to the identification of the office and warehouse accommodation of the Association, provided that the interests of the Association are adequately provided for and that the operations of the Association's business are kept distinct and the charges for accommodation are reasonable.

We consider that the Association acted aright in joining the North Atlantic Conference and that in view of the return freight earned the Association had no option but to adhere to the Conference. The Association should continue to press the Conference for a reduction of the rates on citrus fruit, and in doing so will no doubt receive the full support of the Government.

The extra 3d. paid for irrigated fruit is in accordance with the practice of the industry. We think that there should be no departure from the contract price for any other reason unless it can be shown to be in the interests of the general body of members.

The general criticism of insufficient attention to local contact and service we think is well founded. Whatever the Association's future development may be, we consider that definite steps should be taken to correct this defect. The Association has large numbers of loyal and enthusiastic members, many of them small settlers and often illiterate. By sympathetic treatment and openness in dealing with their members the organisation would have overcome much of the internal criticism which has been directed towards its management.

Certain opponents of the Association have closed their eyes to any possible sincerity of aim amongst those who launched the Association; they make little allowances for their many difficulties, for the bitterness which grievances, whether real or imaginary, and a considerable volume of unjust criticism is apt to arise.

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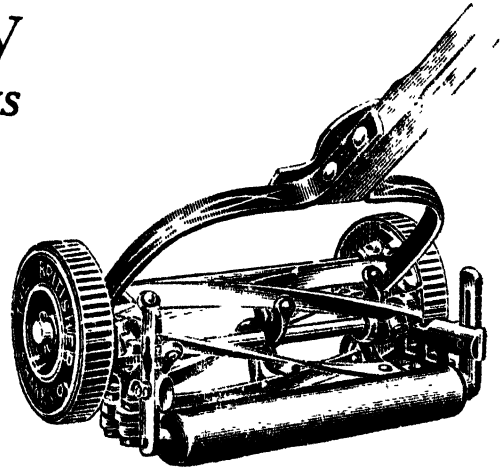
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The Association, on the other hand, has brought much of the opposition on itself. It is said by its critics to be tiresome, tactless and distrustful. Accusation has too often been their weapon: co-operative ideals their shield. The two do not go well together. Their cause would have prospered better with more goodwill and less suspicion of the motives of others.

(*To be continued.*)

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All imported or from imported stock. Carefully selected foundation stock for those interested in starting a Poultry Farm. Well mated pairs, trios, and Pens for Breeding. Hatching Eggs from selected Pens of proven layers, 90% fertility guaranteed. Day old chicks from above breeds.

ANDREW AGUILAR, Phone 3059.

CORRESPONDENCE.

3.1.37.

Editor:
Dear Sir,

Re the letter in your Journal of August, 1936, with reference to goats giving milk prior to being served, I have known several such cases

A neighbour of mine has a Saanen-Alpine cross, now two years old which has been giving milk from the age of six weeks old and up to last month had never seen a ram. She gave as much as two bottles per day before being served. A sister of hers, nine months old and never served, is at present giving a pint and a half per day. It is by no means uncommon for these well-bred goats to start giving milk at from about six weeks old. I have seen it in Toggenbergs, Saanen and Saanen-Alpine crosses.

D.L.

Lucas Street,
St. George's, Grenada.

REPLY.

29th January, 1937.

Dear Sir,

I have to acknowledge your letter of the 3rd inst., and thank you for the very interesting information contained therein.

I am publishing this letter in the Journal as I am sure others will be very interested in it also.

ED.

CITRUS.

(*Extract from Weekly Fruit Intelligence Notes, 17th February*, 1937.)

According to cabled information from the United States Department of Agriculture, citrus crops in California have been seriously reduced by the frosts in January. The orange crop in that State is now estimated at only 24,432,000 boxes, as compared with 37,684,000 boxes a month earlier, while the estimate for grapefruit has been reduced from 2,343,000 boxes to 1,287,000 boxes, and that for lemons from 8,316,000 boxes to 5,832,000 boxes. The estimated grapefruit crop in Arizona is now 1,000,000 boxes in place of 1,750,000 boxes.

STOCK NOTES.

(*Extract from Pig Breeders' Gazette, February*, 1937.)

SHEEP.

Something happened with one of my ewes which no doubt will interest your readers. I kept a flock of white-faced ewes and worked a Hampshire, also a Devon ram with them. This particular ewe lambed a black-faced lamb on a Sunday morning correct to date as marked off, the following Sunday she lambed a Devon lamb. There was no mistake about it, I knew the ewe too well and witnessed the birth of both lambs—the ewe and both lambs lived.

PIGS.

I think we have much to learn about regulating the size of the litter for sows; in my opinion 99 per cent. can be controlled by feeding and management at mating time, you can arrange for two or twenty-two if time permits. I prefer the happy medium and save them all bar one.

Very young gilts have small litters and farrow to date, 16 weeks. The reason is short period of heat. With older sows, well fed, the period of heat is anything from 3 to 7 days and the gestation period 16 weeks to 16 weeks and 5 days.

To avoid abnormal litters delay the service until the third day. Some say more boars are obtained this way—is this a fact? The average well-fed sow comes on heat, often unnoticed, whilst suckling her litter, sometimes 3 days after farrowing, perhaps 9 days and often at 30 days.

! ! ! !

When it is noticed that a sow appears to be "drying off" with her pigs still on her, get 2 ozs. of carraway seeds, pour boiling water on them, allowing time to infuse, and then mix this with the next meal given to the sow.

In 9 cases out of 10, this will bring the milk back.

SPECIALIZING IN HIGH-PRODUCTION STOCK

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New Zealand Whites Exclusively.

Member:--
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101 So Sycamore Ave,
Los Angeles, California.



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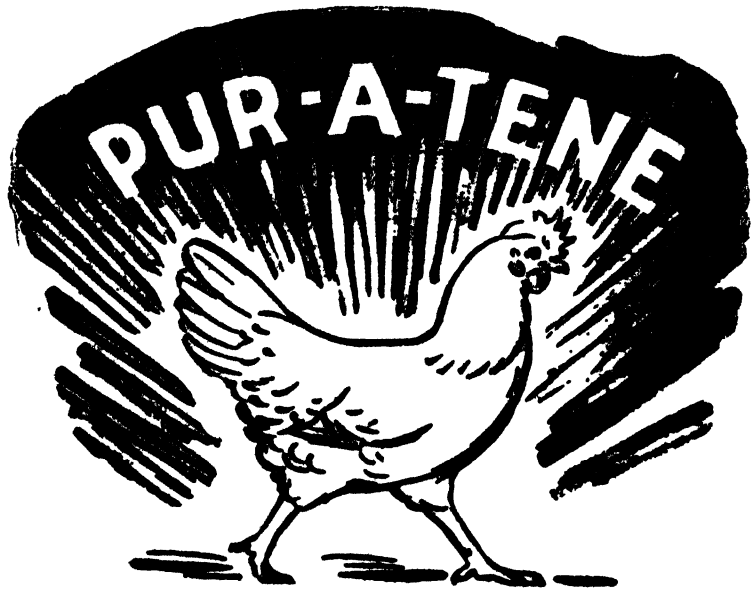
EYE DISEASES.

It cures inflammation of the eyes—Imperfect sight, Bloody eyes, Fleshy growth in the eye, Burning in the eye, Granular eyelids, Leucoma, Cataract, Glaucoma, etc., etc. If used in the healthy eye it keeps the eye cool, and renders it proof against future evils. Literature and prices obtainable from

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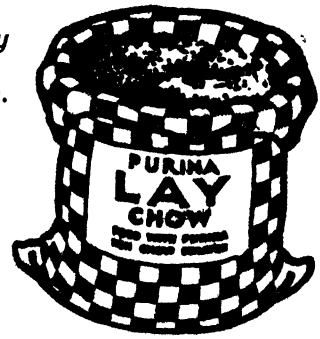
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See that you get "PURINA" - - If in doubt, ask us.

EWAN D. MACDOUGALL--Sole Agent--20 Church St., Kingston.

REPORT OF RED PEAS COMPETITION (Brittonville.)

Bamboo P.O.,
3rd February, 1937.

The Secretary,
Jamaica Agricultural Society,
Kingston.
Dear Sir,

I hereby beg to report on the Peas Competition in connection with the Brittonville Branch.

The objects of the competition was to determine the yield per acre of this crop under good tillage and with the use of cattle manure and mulch.

Each competitor planted a plot of 121 sq. feet. The distances used were rows 18 inches apart and one grain of pea at 4 ins. along the rows. The variety of pea grown was Round Red. The peas were all planted on the 22nd July, 1936 and judged approximately eleven weeks after, that is, before they were ripe; and so they had to be judged again after they were dried so as to determine the results.

We found that four inches spacing along the rows was too close and that six inches would afford better spacing. The competition has proven that under good cultivation a good yield per acre can be obtained as the competitor who got first place averaged, all things being equal, a little over 21 bushels per acre. The sample of pea was also very much above that which is grown in the old fashioned way.

The total number of marks that were obtainable were 50, divided as follows:—

Preparation of Soil	15	marks
Efforts ...	10	"
General Condition...	15	"
Results ...	10	"
	50	

I was assisted with the judging by Mr. J. C. McIntyre of Claremont.

Below you will see how the marks were obtained by the competitors:

Competitors.	Efforts. 10	Preparation. 15	General Condition. 10	Results. 15	Total.	Quantity. Qrts.
C. Mitchell ...	9	14	9	15	47	1⅞
E. Arnett ...	8	12	9	14	43	1¾
W. Arnett ...	7	12	10	14	43	1¾
L. H. Watt ...	9	13	8	10	40	1½
A. S. Martin ...	8	11	6	10	35	1½
Miss O. Taylor ...	8	11	5	7½	31½	15/16
Jas. Brown ...	4	10	5	10	29	1¼
S. Robinson ...	3	7	5	12	27	1⅛
L. Brown ...	5	10	6	4	25	¾
Lydia Comrie ...	3	3	1	4	11	½
Harold Rose ...	6	10	8	—	—	

(Disqualified.)

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The Best Feed
For Every Need

Poultry:

From 1 to 6 or 7 Weeks old
PIONEER CHICK MASH
PIONEER CHICK SCRATCH

From 6 or 7 Weeks to 4½ or 5 Months
PIONEER GROWING MASH
PIONEER DEVELOPING SCRATCH

From 4½ or 5 Months on
For Egg Production
PIONEER LAYING MASH
PIONEER SENIOR SCRATCH

For Table Use Broilers and Capons
Feed same as above but use PIONEER BATTERY Chick Mash in place of Pioneer Chick Mash and PIONEER FATTENING MASH in place of Pioneer Growing Mash and Pioneer Laying Mash

Turkeys:

From 1 to 6 Weeks old
Pioneer TURKEY Starter
From 6 Weeks old on
Pioneer TURKEY Grower

Pigeons:

Pioneer PIGEON FOOD

Enquiries Solicited:

WHOLESALE FROM *Adolph Levy & Bro.*

The original Report to the Branch was signed by Mr. J. C. McIntyre and myself, who were the Judges.

Yours faithfully,

(Sgd.) C. V. ATKINSON,
Instructor and Judge.

(Extract from Weekly Fruit Intelligence Notes, 20th January, 1937).

Imports of Raw Fruit into the United Kingdom.

GRAPEFRUIT.

Country whence consigned.	December. 1934	1935	1936	Year. 1934	1935	1936
Brit. Honduras	368	493	411	8,514	7,928	10,451
Jamaica ...	5,055	11,686	4,050	104,697	63,410	120,377
Trinidad ...	1,554	2,759	1,770	11,902	35,732	18,763
Palestine ...	40,547	68,400	65,726	235,207	508,510	423,925
South Africa ...	—	3	1	151,424	160,116	189,321
Other Empire	96	72	951	3,219	970	3,314
Argentina ...	—	—	—	17,507	10,392	11,416
Brazil ...	42	—	—	24,169	41,769	60,730
Cuba ...	708	—	—	20,664	9,747	28,675
Honduras Rep.	313	809	—	1,765	6,483	21,114
Spain ...	929	475	137	6,800	3,631	5,619
Porto Rico ...	—	—	—	18,262	8,424	2,503
Portuguese East Africa ...	—	—	—	23,871	19,582	31,148
United States ...	4,304	2,522	3,035	336,274	292,740	207,497
Other Foreign...	157	70	124	1,586	8,182	6,186
Total ...	54,073	87,289	76,205	965,861	1,177,616	1,140,989

ORANGES.

Australia ...	4,908	1	4	112,879	48,154	38,944
Cyprus ...	11,043	11,586	28,286	63,261	47,184	115,982
Jamaica ...	326	3,334	27,525	1,080	3,578	105,816
Palestine ...	372,974	455,492	700,647	2,042,404	3,062,882	2,440,591
South Africa ...	6,414	12,012	6,589	1,216,186	1,220,787	1,359,709
Southern Rhodesia	—	—	—	72,887	49,678	27,002
Other Empire ...	128	286	2,955	1,919	2,516	3,547
Brazil ...	14,892	17,894	68,051	1,219,564	1,080,652	1,296,853
Spain ...	1,364,692	1,232,883	491,579	5,069,073	3,542,255	3,604,242
United States ...	504	465	16,445	500,554	1,146,818	446,564
Other Foreign ...	23,239	11,766	27,512	104,624	100,803	93,115
Total ...	1,799,120	1,744,669	1,369,543	10,404,361	10,305,307	9,532,815

MARKETING NOTES.

Local Produce Prices.

Annatto	...	Well cured, prime, red seed	21/- delivered Outport. 22/- " Kingston.
Cocoa	...	Ordinary ...	40/- " "
		Fair Fermented ...	40/- " "
Coffee	...	Good Ordinary ...	36/- " "
		Fine Ordinary ...	38/- " "
		Manchester B ...	38/- " "
		Manchester A ...	40/- " "
Divi-Divi	...	Sound quality, well cured	2/- per cwt., nett wts. delivered Kingston.
Goat Skins	...	Sound quality, well cured	2/1d. per lb. dlvd. Kgn.
Honey	...	Water White ...	3/6d. per gall. dlvd. Kgn.
		Pale Amber ...	3/- " " "
		Light Amber ...	2/9d. " " "
		Dark Amber ...	2/6d. " " "
Kolanuts	...	Sound quality, well cured	13/- delivered Outport. 14/- " Kingston.
Lime Juice	...	Good, fresh, green, top-pulp ...	1/4d. per gall. delivered wharves outports, sound phns.
Orange Oil	...	New crop Sweet—sound quality, well filtered	4/6d. per lb delvd. Kgn
		New crop Bitter—sound quality, well filtered	4/6d. per lb delvd. Kgn
Sarsaparilla	...	Well cured, red roots	35/- delivered Kingston nett weights.
Wax	...	Pure clear quality ...	9d. per lb. delivered Kgn. nett wts.

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made of limes and cologne water.

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Also used as an after-shave lotion and as a bath essence.
1/3 per bottle, 1/6 mentholated.

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THE SALE OF FERTILISERS.

(*By* H. H. CROUCHER, B.Sc., A.I.C., Agricultural Chemist.)

It is not generally known that the sale of fertilisers in Jamaica is controlled by law. Law 18 of 1901 states that—

"Every person who sells for use as a fertiliser of the soil any article manufactured or compounded in the Island or imported from abroad shall give to the purchaser an invoice stating the name of the article and whether it is an artificially compounded article or not, and what is the percentage of Nitrogen, soluble and insoluble phosphoric acid and potash, if any, contained in the article, and this invoice shall have effect as a warranty by the seller of the statements contained therein."

"For the purpose of this Law the expression . . . 'soluble' and 'insoluble' shall respectively mean soluble and insoluble in water."

Numerous instances of sales of fertilisers where this law has been disregarded have been noticed. Members of the Jamaica Agricultural Society should use this law to protect themselves when they purchase any fertilisers by demanding from the purveyor a written statement of the guaranteed analysis of their purchase.

The statement should express the guaranteed composition of the fertiliser in the following terms:—

Name of Fertiliser.

	Per cent.
Nitrogen	do
Total Phosphoric Acid (P_2O_5) ...	do
Water Soluble Phosphoric Acid (P_2O_5)	do
Total Potash (K_2O)	do

While many dealers supply a statement of the guaranteed analysis of the fertilisers they offer, the percentage of nitrogen is frequently quoted as ammonia, and the content of water soluble phosphoric acid is omitted. Purchasers should assure themselves that the nitrogen figure given represents the content of nitrogen expressed as Nitrogen and not as Ammonia. The latter figure is higher than the former, and its use may be misleading to the uninitiated. The method of converting the percentage of nitrogen expressed as Ammonia (NH_3) into nitrogen expressed as Nitrogen (N) is to multiply the ammonia percentage by 0.824.

If I Cannot Do Great Things,
I Can Do Small Things In A Great Way.
—JAMES FREEMAN CLARKE

No Nation Can Rise Higher
Than The Character Of Its People.

BRANCH NOTES.

All Reports received are acknowledged in this section of the Journal. This month we have only been able to put in print Notes from **Branches who have not yet had a publication for this year.**

Branch Secretaries should **write on one side of the paper only.**

Ed.

ST. CATHERINE : Garden Hill.—Meeting held 10th February. Present : the President, in the Chair, 13 other members and 1 visitor. Arising from the minutes, a few important items affecting the road were discussed. Reference was made to the visit of Mr. L. R. Ricketts in his office as Chairman of that section of the Road Committee. Three Authorized Persons reported no arrests for 1937. In the opinion of this Branch the abovementioned persons have been and are still giving excellent service. The importance of Coffee pruning was discussed. Minor matters were then dealt with and the meeting terminated.

(Miss) V. A. PRICE,
Secretary.

Point Hill P.O.

Princessfield.—Meeting, 22nd February. There were present : the Chairman in the Chair, Instructor Byles, and H. S. Frances, Agricultural Foreman. Matters arising from the minutes were dealt with in the usual way. It was decided to communicate with the Chairman of the Parochial Board again re Road and Water Supply. Correspondence was dealt with. Two Authorized Persons reported "All Correct." The Instructor in his address said that it was important that the people in the district get together and make the Branch more successful. He urged them not to be weary in well-doing but to try and make the Branch a lively one. He advised landowners to improve their holdings, and informed them of the many development schemes the Government has under consideration : (1) Citrus, (2) Vegetables, etc. He suggested the growing of small crops, viz., Tobacco, Potatoes, Annatto and Cassava. He advised more mulching. Mr. J. A. Peterson moved a hearty vote of thanks to the Instructor for his address. The singing of the National Anthem brought the meeting to a close.

P. G. C. GRAHAM,
Secretary.

Bog Walk P.O.

WESTMORELAND : Strawberry.—Meeting held 9th February. Present : Mr. M E. Beckford, President, and 16 members and visitors. Matters dealt with were (i) Road and Infant School, (ii) Invitation to His Excellency the Governor to visit the District, (iii) Resolution that a letter be sent to the Hon. Dr. J. W. N. Hudson, informing him of the Branch's invitation to His Excellency, (iv) Development of certain crops which are far more profitable to the Island's industry than those in which we are now engaged, viz., Red Peas and other grains. The singing of the National Anthem brought the meeting to a close.

H. WESLEY REYNOLDS,
Secretary.

Friendship P.O.

ST. ELIZABETH : Brighton.—Meeting held 12/2/37. Present : Instructor G. W. Wray, Mr. A. S. Comrie, President, 8 other members and 2 visitors. As arising out of the minutes, the Irish Potato Industry came in for discussion. Leaf Disease of Bananas was discussed. The meeting ended with the singing of the National Anthem.

L. C. M. WALLACE,
Secretary.

Brighton P.O.

Pepper.—Meeting held 17th March. Present : the President Secretary, Instructor Lynch, six other members and a visitor, Rev. J. Carnegie. After confirmation of minutes, correspondence was taken. This included letter from Mr. J. T. Calder, M.P.B., stating that the district road had been taken over by the Parochial Board. There was a discussion on the Country Fires Law. It was decided that a resolution be be sent to the Half-Yearly Meeting asking for amendment of the Law. The Instructor encouraged the growth of Pineapple and informed members that they will be much indemand later on, especially the species known as "Cowboy." The Secretary was advised to circularize members re the Annual Meeting to be held in April when there will be election of Officers.

(Mrs.) M. A. ATKINSON,
Secretary.

Pepper.

Kilmarnock.—Meeting held 9th February. Present: the President, Secretary, Instructor Wray, 6 members and 1 visitor. After the reading and confirmation of minutes, matters therefrom were dealt with, re the Boar. The Secretary was instructed to enquire the reason for its delay. Re the Billy, nothing further was paid towards the conveyance. Instructor Wray at this stage then gave his address. He explained the aims of the Jamaica Agricultural Society which, as a big school, sends out Instructors to impart the knowledge they gained. He then explained to the meeting soil testing. He then spoke of Leaf Spot Disease of Bananas. His address was very interesting and he was heartily thanked by all. Authorized Persons reported "All Correct." One Authorized Person was nominated. Meeting terminated with The King.

J. E. MONTEITH,

Newmarket P.O.

ST. JAMES: Adelphi.—Meeting held March 9, 1937. Present: Rev. Mr. Brown of Marley Church, Messrs H. A. Young (3rd Vice-President), W. D. Marr, Instructor, and seven other members. The Secretary reported the affiliation of the Branch, and that Journals as from the May, 1936 issue to the January, 1937, had been sent to members. The position of the funds and the number of members were next reported. The communication re Authorized Persons received from the Parent Secretary was read and dealt with. It was decided to postpone the appointment of Authorized Persons here until the necessity arose to do so. A Resolution re Roads was sent to the Government through the Agricultural Society. A copy of this Resolution was sent to the Hon. Member of the Legislative Council for the parish of St. James. The discussion on Unemployment was postponed till a later meeting. The Instructor answered satisfactorily some questions asked about the cultivation of Sweet Potatoes and Tomatoes for export. The next meeting was fixed for Tuesday, April 13. The meeting closed by the singing of the National Anthem.

ALVIN B. MCKENZIE,
Secretary.

Adelphi P.O.

Dalvey.—Meeting held 18.2.37. Present: Mr. U. A. McLaren, Instructor, J. M. Dayle, President, 14 other members and several visitors who subsequently became members. Mr. McLaren, who spent the day in the district doing demonstration work, was called upon to address the gathering. He spoke of the Nutrition Committee formed by the Governor, and the usefulness of this Committee. He advocated the planting of vegetables. The Instructor spoke of Honey as a valuable food, and encouraged the improvement of our cocoa plantations. "We should avoid country fires," he said, and put into practice lessons taught in the Society, to show that the Jamaica Agricultural Society justifies its existence. The impending departure of Mr. Glaister Baxter was commented on. Panama's gain was Jamaica's loss. A vote of thanks was conveyed to the Instructor. The meeting adjourned by the singing of "The King."

JOE MACPHERSON,
Secretary.

Dalvey P.O.

Salt Spring.—Meeting 10th February, 1937. The President, Mr. G. W. Anglin, president. There were also present: Instructor W. D. Marr, and 10 members. Matters dealt with were: (a) Reading and confirmation of minutes; (b) Arrangements to visit Grove Place; (c) Motion from the President on the advisability of having a Co-Operative Labour Scheme for the Branch; (d) Correspondence from the General Secretary re Authorized Persons; (e) Resolution from V.-P. Mr. R. Clarke that the Government be asked to require the D.M.O. to visit the district periodically, to attend people who were too old and weak to travel to Montego Bay; (f) Instructor W. D. Marr lectured on "Foods"—suitable types and where obtained. He compared the Island's imports with its exports, and showed where a well-cultivated farm should feed the family; (g) Roll Call and the singing of the National Anthem terminated the meeting.

LLEWE. E. DILLION,
Secretary.

Montego Bay P.O.

CLARENDON: Prospect.—Meeting held 1.2.37. Present: Mr. T. A. Fearon, President, Instructor W. L. Shirley, 2 visitors, who subsequently became members, and 25 members. Mr. G. D. Dawkins, delegate to the Half-Yearly Meeting, gave his Report, which was full and interesting. He was accorded a vote of thanks. Before the meeting, the Instructor gave an interesting Demonstration on Cocoa Pruning in the school premises. The outstanding feature of this meeting was the Instructor's Address. He spoke on the Department of Science and Agriculture. He mentioned the various other Government Departments, and showed how much they all are hinged

on Agriculture. He dealt elaborately on the practical field service, and also on the scientific side. This Address was an eye opener to many. He encouraged the careful reading of the Journal, the training of children in Agriculture, the use of Fertilizers, and the careful preparation of products for the market. A very hearty vote of thanks was accorded the Instructor for his address. There were present three A.P.'s who reported "All Correct." The Roll Call and Payment of Fees were then taken. The National Anthem closed a splendid meeting.

G. DANIEL DAWKINS,
Chapelton P.O. Secretary.

Brandon Hill.—Meeting held 15th March. Present: the Instructor, Mr. W. Shirley, Revs. Samuels and Jones, Mr. T. Matthews, presiding, 15 other members, and 4 other visitors. As arising from the minutes, there was a short debate regarding the White Yam Competition. The Instructor stated that the number of hills for competition had been reduced to twelve. Donation to the Fund for Mr. Baxter was dealt with. Four Authorized Persons present reported creditably. The Instructor next gave an interesting and encouraging address. After exhorting the members to lift the standard of the Society in the future, he advised them to grow enough of every crop so as to be able to supply the needs of the community. A hearty vote of thanks was conveyed to him. After the Roll Call delegates were appointed to attend the General Half-Yearly Meeting to be held at Chapelton. A committee meeting was planned for the 15th March, to draft Resolutions for this meeting. The House then rose with the singing of the National Anthem.

(Miss) E. A. GRAHAM,
Colonel's Ridge P.O. Assistant Secretary.

Pleasant Valley.—Meeting held 16.3.37. It was noted that the next judging of Banana Competition was changed from 30th March to 6th April. Donation of 5/- was voted toward the Baxter Presentation Fund. Matters re White Yam Competition, Equipment for Authorized Persons, and Country Fires Law were dealt with. Invitation from Toll Gate Branch to Unity Rally was noted. Eight members were present, Mr. A. L. Virtue, Instructor and a visitor. It was decided that an invitation be extended to Messrs. A. Lawson, H. G. Dunkley R. O. Terrier, R. E. Rickman, also Supervisor A. P. Hanson, to attend a meeting of the Branch. Other minor matters were dealt with and the meeting termined with The King.

(Mrs.) A. A. FLYTER,
May Pen P.O. Secretary.

Rock.—Meeting held 24th February. Present: Mr. T. C. Swainson, President, and thirteen other members and two visitors. After the usual preliminaries, correspondence (a) inviting the Secretary and President of the Branch to a meeting at May Pen; (b) re Land Settlement of Ashley property taken up by the Branch; (c) re Mr. Baxter's Fund; and (d) re White Yam Competition, were dealt with. Authorised Person Wm. Patterson, reported two cases of larceny with which he had to deal. Other matters dealt with were, discussion on the resolution re Post Office at Rock, Parochial Board re Ticket Distributor for Rock, District Nurse, and Latrine at Rock Railway Halt, Red Peas Industry, and Land Settlement at Ashley. The meeting terminated with the singing of the National Anthem.

H. D. THOMAS.
Osborne Store P.O. Secretary.

ST. THOMAS: Thornton.—Meeting held 9th March. There were present: Mr. U. A. McLaren, Instructor, the President, 11 other members, including the Secretary, and one visitor. After the minutes the Secretary read correspondence from the Parent Society re the setting of fire in certain parishes, and the complaints made by Authorized Persons not getting their badges and handcuffs after appointment; also letter in connection with the resignation of Mr. Baxter. This Branch has promised to contribute to the Presentation Fund, however small it may be. Authorized Persons Campbell and Bennett reported 3 arrests for praedial larceny of bananas, cocoanuts—fine, 18/- or fourteen days; banana suckers, admonished and discharged; the other for bananas in custody, not yet tried. The Instructor gave his usual address, explaining the dangers done by the setting of fire to bushes. The Roll Call terminated the meeting in its usual way with the National Anthem.

N. A. PATTERSON,
Sunning Hill P.O. Secretary.

Pear Tree River.—Meeting held 1st February was a bright and interesting one. Present: Mrs. E. Beckford, President; eleven other members and eight visitors. Matters arising out of previous minutes were, (a) the Report of the Entertaining

Committee, which was dealt with lower down on the agenda; and (b) the reply from the Clerk of the Parochial Board re the resolutions about New Road and the establishment of a Government Elementary School in the district. The Report of the Entertaining Committee was adopted. The Acting Secretary read an article on "Advantages of Regular Attendance at Branch Meeting" from the September, 1936 Journal. The Chairman commented on the Knutsford Park Show held on 24th February, 1937. Mr. Robinson suggested that some of the funds of the Branch should be utilized to demonstrate to non-members the benefit of meetings, so that they would eventually be induced to become members and attend Branch meetings. Mr. C. Brown suggested the establishment of an Infant School. The Acting Secretary suggested the purchase of a boar to improve breed and to encourage pig rearing, while Mr. S. Harris suggested the purchase of a ram. The Chairman wittily commented on the suggestions and subsequently suggested that a Homestead Improvement Competition in and around the district with the object that Sanitation and the general appearance of the district will be improved, be held. This was supported by Mr. Robinson. This suggestion was carried. Mr. Robinson further explained that the aim of the Competition would be to improve the entire district, making it possible for a visitor to see all homes having a decent and nice appearance. A Committee of four was appointed to draft Rules. The Roll Call was taken and the meeting rose.

V. RALPH MCLEAN,
Acting Secretary.

Port Morant P.O.

ST. ANDREW : Gordon Town.—We received a report which we read with much interest, of the activities of this Branch during the past year, from the Secretary, Mr. C. W. Campbell. We regret that owing to limited space we are unable to publish this.

EDITOR.

ST. MARY : Clonmel.—Meeting 8.2.37. Present : Rev. S. J. Williamson, B.A., 1st Vice-President in the Chair, Mr. D. A. Jones, Instructor, ten other members and four visitors. Prominent among matters dealt with were : (a) the establishment of a Government Savings Bank in the district; (b) information to be forwarded to the Parent Society in connection with the cultivation of Red Peas. The Instructor gave an interesting address, for which he was heartily thanked. Mr. Edward Brown, a member of the Branch, asked that a matter of "Land Settlement Scheme" be dealt with at the next meeting.

J. M. SIMMONDS,
Secretary.

Clonmel P.O.

Flint River.—Meeting held 11.2.37. Present : Mr. H. G. Vassal, in the Chair, Instructor Jones, and eleven other members. A report from the Juveniles was given on the rabbits they had in charge. One member reported that he had eleven big and small ones, and they were thriving well. Authorised Persons reported "All Correct." The Demonstration Plot was visited and reported on by the Instructor. The Six Weeks Potatoes were said to be bearing nicely. The report of the Half-Yearly General Meeting was given by the President who was the delegate. A vote of thanks was conveyed to Mr. Vassal. Thanks was returned by the President. The Instructor then showed two kinds of Tobacco that are suitable for cultivation. In his usual fine style he gave an address. Other important matters were dealt with. The meeting then terminated with "The King."

E. LEO. FAWCETT,
Secretary.

Richmond P.O.

Marlborough.—Meeting held 26th January. Present : 12 members, Instructor Jones, Mr. Chambers, Officer in charge of the Richmond Constabulary Station, and two visitors. The Instructor gave an address on the "Black Spot Disease," which is not a menace to the Area yet. Mr. Chambers also talked to the Authorised Persons. The Secretary urged the members to take more interest in the Society. His remarks were supported by the President and Mr. Jones. Authorised Persons reported thus : Messrs. N. Brown, W. McKoy and E. Bryan, "All Correct;" Ernest Miller, 1 arrest and conviction; L. D. McFarlane, 4 arrests and 8 convictions; E. Riley made 8 arrests, got 1 conviction, and one of the accused not yet tried. This done, the inspection of equipment of Authorised Persons was taken, followed by the Roll Call. The meeting terminated with the singing of the National Anthem.

S. L. S. STERLING,
Secretary.

Richmond P.O.

Richmond.—Meeting held 26.2.37. Present: the Agricultural Instructor, Mr. D. A. Jones, 11 members and 6 visitors, who afterwards became members. The Instructor welcomed the visitors, who responded. He lectured on Minor Crops and Industries, and also spoke on the importance of sending delegates to the Half-Yearly Meetings by all the Branches of the J.A.S. Five Authorised Persons in attendance reported O.K. in their respective districts. The Chairman reminded members to attend the coming Annual Meeting. The singing of the National Anthem closed the meeting.

S. A. OFFICER,
Secretary.

Richmond P.O.

Preston.—Meeting held 19th March, when the Instructor, Mr. L. M. B. Coke, was present. The President was unavoidably absent. Before the meeting, the Instructor demonstrated at the Holdings of Messrs. H. Harley, on Cocoa Pruning, Creightney on Budding Citrus. The Instructor gave an instructive address on the best way to grow Cocoa and keep the trees in order; also Citrus. He was thanked by all present.

ISAAC A. AMIEL.
Secretary.

Bonny Gate P.O.

TRELAWNY: Spring Garden-Rock Spring.—Meeting held 11.3.37. Present: President, other Officers, Agricultural Instructor, Mr. M. N. Thompson, 14 members and many visitors. Arising from the minutes, the following were dealt with: (a) Subsidiary Crops. The Instructor spoke on the usefulness of such crops, and specially emphasized Tobacco and Red Peas. (b) Tobacco Industry: the matter was fully discussed and it was decided that the Parent Society be written to asking Government to send the Tobacco Expert here to pronounce as to the suitability of the land. Correspondence: Re Presentation Fund for Mr. Baxter. It was agreed that the amount of 5/- be sent. Two new members were enrolled. The members expressed deep dissatisfaction with the irregular manner in which the Journals are being sent. It was agreed that the General Secretary be asked next year to send the Journals to individual members. The Instructor gave a very useful and interesting talk on the Growing of Cabbages. He was heartily thanked. The A.P. reported 1 arrest and 1 commitment. The singing of "The King" terminated the meeting.

(Miss) L. M. EDWARDS,
Secretary.

Albert Town P.O.

Ulster Spring.—Meeting held 8th March, 1937. The meeting was an interesting one. Rev. J. A. Edwards presided. The Instructor, Mr. M. N. Thompson, gave helpful suggestions throughout the meeting on various matters. Correspondence was dealt with. Messrs. J. Lemonious and Edward Palmer were appointed Authorised Persons. Minor matters were dealt with and the meeting adjourned after the National Anthem was sung.

(Miss) I. C. WILLIAMS,
Secretary.

Ulster Spring P.O.

Waldensia.—Meeting held 1.2.37. Present were: D. A. Beckford, Esq., President, and 13 other members. Apology for absence was tendered on behalf of the Instructor. Matters dealt with as arising from the minutes were: (a) Date and hour at which monthly meetings should be held; (b) a ram for the Branch; (c) Road matters. A Resolution fixing the time for meeting on 1st Monday at 6 p.m. was unanimously carried. Correspondence was next dealt with, as follows: (a) Instructors and night meetings; (b) Veterinary Officer for sick animals; (c) Red Peas production. Open discussion on Road through Fontabell followed. A Resolution was passed asking that a Petition be sent to the Parochial Board, and that a copy be sent to the M.L.C. asking for deviation of the said road. Minor matters were dealt with and the meeting came to a close by the singing of the National Anthem.

C. C. LEE,
Secretary.

Sherwood Content P.O.

Wilson's Run.—Meeting held 9.3.37. There were present: Mr. W. A. Motto, President, Mr. Thompson, Agricultural Instructor, eight other members, Miss Kagaro, and 140 children and the Secretary. An Agricultural Plot was considered. The President then gave an interesting address. He reminded the House of the closing of the Financial Year and that all members must make their best efforts to pay their subscriptions. A resolution was passed expressing appreciation of Mr. Baxter's services, not only to the J.A.S., but to the Island. Minor matters were discussed, then the meeting terminated.

L. E. COWAN,
Secretary.

Troy P.O.

HANOVER :— Hanover Windward.—Meeting held 20th February. Present : Mr. J. Hastings, in the Chair, Mr. C. C. Hastings, Agricultural Instructor, and a large number of members. The Chairman welcomed the members. Matters arising from the minutes were discussed, chief of which were : (1) buying of a Burdizzo Emasculator; (2) Report of Delegate of Half-Yearly Meeting of the Hanover Associated Branches; (3) Report of Authorised Persons; (4) Water Supply for Cold Spring and Success; (5) Baxter Presentation Fund; (6) Country Fires Law. Matters of minor importance were discussed and the agenda for the next meeting was arranged, after which the meeting terminated by the singing of the National Anthem.

J. Z. MALCOLM,
Great Valley P.O. Secretary.

Orange.—Meeting held 11th March. Many members were present. The Report of the Business Committee concerning the visiting of Grove Farm was given. After some discussion it was decided that it would be inconvenient to carry out this visit, so it was decided to put it off until a later date. Arising from the minutes the question of the getting of a ram to improve the milk and meat strain, was discussed. It was decided that the Secretary should get all particulars concerning a certain ram and report to the next meeting. Correspondence was next dealt with, when that leading up to the getting of equipment for Authorised Persons was discussed. Letters from the Hon. A. B. Lowe and Dr. Overton, M.O.H. were also read. They regretted not being able to be present to carry out the cause for which they were invited, but would be glad to attend at any other convenient time. The Secretary was asked to send a letter to the Clerk of the Parochial Board to inquire what happened to the Petition sent them re the supply of water for this the dry part of the district. The agenda for the next meeting was fixed, when it was decided to have the debate, "Should Jurors be paid?" Friends were asked to keep their interest in the Society alive and to do all they can to make it one of great importance. The meeting came to its close by the singing of the National Anthem.

E. S. ANGLIN,
Adelphi P.O. Secretary.

Hanover North Western.—Annual Meeting held 1st March, 1937. Present : Messrs. N. W. Hutchinson, President (presiding); C. C. Hastings, Agricultural Instructor, and 26 others, including some visitors who became members. Correspondence was dealt with. Presentation to Mr. Glaister Baxter, the Secretary, was discussed and the Society voted 5/- for the purpose. The Annual Report was read by the Secretary, and the Instructor moved a hearty vote of thanks to the Secretary for his able Report. Mr. McKenzie seconded and it was unanimously carried. The Treasurer gave his report, showing a small balance. He was thanked. Election of Officers resulted as follows : Mr. N. W. Hutchinson, President, and Rev. B. C. Lumsden, Hon. Pres. (re-elected); Mr. D. Scott, 1st V.-P., Mr. Geo. Dinham, 2nd V.-P., Mr. F. Clayton, 3rd V.-P., Mr. R. McKenzie, Treasurer (re-elected), and Mr. T. E. O'Reilly, Secretary. It was arranged to have a Social on the night of the 31st March. The Instructor gave a very helpful address, including (1) Bush Fires; (2) Country Fires; (3) Dietary; and (4) Mulching and liming of soils. He was thanked. The meeting then adjourned with the singing of the National Anthem.

T. E. O'REILLY,
Askenish P.O. Secretary.

We also received a copy of the Annual Report of the Hanover North Western Branch, and regret that owing to lack of space we are unable to publish same.

EDITOR.

MANCHESTER : Bellefield.—Meeting held 5th March. Present were : Mr. D. D. Phillips, J.P., in the Chair, and 15 other members. Mr. R. Haynes reported that he had collected handcuffs and badges from relatives of deceased Authorised Person. Mr. S. Smith was again requested to collect such badges of office belonging to the Society which were still out. Mr. D. D. Phillips informed the meeting that he had seen Mr. Smith of the Low Temperature Station and had reported to him the decision of the Branch to co-operate in the Vegetable Growing project, and Mr. Smith requested him to carry on in conjunction with the Mizpah Branch, the members of which are also desirous of co-operating in the industry. Mr. U. C. Wolfe, Secretary of the Mizpah Branch came in and joined in the discussion. Mr. Phillips promised to visit the Mizpah Branch at their next meeting and to give a lecture on the subject of Vegetable Growing. It was decided that the Co-operation be named the "Bellefield Vegetable Society" in co-operation with the Bellefield Branch, and that members of this organization be also members of the Branch Societies. It was suggested that the land set aside for vegetable growing should be prepared at once. Minor matters were dealt with and the meeting brought to a close.

(Miss) M. J. MORGAN,
Williamsfield P.O. Secretary.

Devon Potato Growers.—Meeting held 5th March, 1937. There were present: 16 members and 7 visitors. Among the visitors was Rev. W. A. Kaltreider, of Bethany, who was invited to give an address. Apology for absence was sent by Mr. J. A. Graham, Agricultural Instructor, who was ill. The Instructor promised to meet the members of the Association at Holmwood Training Centre on the 19th inst., where he would carry out demonstrations in the spraying of potatoes. Correspondence from the Parent Society re Country Fires Law, and the supplying of articles of equipment to Authorised Persons, received attention. A letter from Mr. T. J. Cawley re the resignation of Mr. Glaister Baxter as Secretary of the Agricultural Society, was also dealt with. The members expressed regret at losing the services of one who served the Society so efficiently, and promised to subscribe towards the Presentation Fund. The Rev. Mr. Kaltreider then addressed the meeting, and spoke on the high and noble calling of Agriculturists. Thanks was conveyed to the speaker through the President. Mr. S. Miller, a visitor, also spoke. The meeting closed with the singing of the National Anthem.

(Miss) J. I. ROBINSON,
Secretary.

Devon P.O.

Keynsham.—Meeting held 19th March. Present: Instructor M. N. Thompson, and 5 members. The following matters were fully discussed: (a) Corn Growing Competition, for which suitable arrangements were made, (b) Cassava growing; (c) Country Fires Law; (d) Presentation to Mr. Glaister Baxter. The Instructor gave appropriate suggestions and advice with regard to the chief points raised. It was agreed that the Instructor's lecture be a regular feature of the agenda of future meetings. Meeting closed with the National Anthem.

C. A. WRIGHT,
Reporting Secretary.

Balaclava P.O.

Porus.—Meeting held February 1st. The Instructor, Mr. H. A. Darby, gave a very instructive lecture. He took for his subject the Fly Pen and its usefulness. Tobacco and Corn also the Citrus. Cows, donkeys, mules or horses should not be left out in the bush at nights, but kept in the home and fed in the pen so as to get the manure to help the soil. Agriculture is the means of putting something in the land, then it will be worked profitably. Thanks was returned to the Instructor for his timely lecture.

C. ROWLAND,
Secretary.

Porus P.O.

Royal Flat.—At a meeting of the Branch Mr. N. Nash, President, presided. Prayer, minutes, and correspondence followed. Resolution passed re Sanitation of Royal Flat, matter to be reported to Parochial Board, with a view of securing rubbish bin. Resolution passed re Stud Animals—bulls, horses and asses, to send to M.B. Associated; nomination of new Authorised Persons; Resolution re Mr. Baxter's resignation as Secretary, passed. Deep regret was expressed at his finding it necessary to leave the Agricultural Society, especially at this time. Mr. E. A. Peart reported disease among goats. He was advised to write to the Agricultural Society about it. The Secretary was directed to make investigation of the J.A. Society re Sweet Potatoes, with a view to extending the industry as a commodity for foreign market. Meeting adjourned with National Anthem.

H. LISTER JOHNSON,
Secretary.

Williamsfield P.O.

PORTLAND: Claverty Cottage.—Meeting held March 13th, 1937. Present: Mr. F. Brown, 3rd Vice-President, in the Chair, 9 members, 2 visitors. Matters arising out of the minutes were dealt with. The members pointed out that horse and mule taxes are too high. The Secretary said that a resolution had gone up about it. Correspondence was read about the "Country Fires Law." Many other matters were dealt with. The Acting Secretary reminded the members of the Annual Meeting. Meeting was brought to a close by singing the National Anthem.

D. MOORE,
Assistant Secretary.

Skibo P.O.

Drapers.—Meeting 5th March, 1937. Members and visitors to this meeting totalled over 50. Many of the visitors gave in their names to become members. The following important matters were dealt with: (1) a Post Office for the district; (2) a way to lessen the larceny of cocoanuts; (3) The Country Fires Law. This caused a lengthy discussion. The President encouraged all present to support the Branch and make

it a success. Arrangements were made for the Annual Meeting in April. The meeting closed with the National Anthem.

(Miss) M. P. DUNCAN,
Secretary.

Port Antonio P.O.

ST. ANN : Sturge Town.—Meeting held 26th February. There were present : 19 members and 7 visitors. The President, Mr. C. R. Moss, welcomed all present, especially G. Anderson Cocks, Esq., who was present to address the Branch on the invitation of the Society. Of business arising out of the minutes, the following were dealt with : (a) Authorised Person; (b) a grindstone for the Branch. The Secretary stated that as directed he sent a letter of thanks to Mr. Cocks for allowing a road through his property to the main road. Mr. Cocks was then asked to address the meeting. The speaker prefaced his address with thanks to the Branch for having invited him. His subject for the evening was Livestock, which he dealt with in a most masterly manner. He held his hearers in rapt attention from start to finish, while he dealt with the general treatment and particular care of the horse, the donkey (the poor man's friend), the goat, the pig, and the fowl. He kindly answered several questions put to him on the subject, and left the Branch with a recipe for making food for motherless young calf, cub or kid. He also left a picture of a suitable harness for tying out a sow. He was thanked by the meeting for his most valuable address. Mr. C. M. A. Robotham, Agricultural Instructor, next addressed the meeting dealing with several topics, principally Nutrition and White Yam growing, also the White Yam Competition which is being arranged for planters in St. Ann and Clarendon. He was most heartily thanked. A resolution was moved and passed by the meeting to place on record their high appreciation of the work of Mr. Glaister Baxter, Secretary of the J.A.S., and their deep regret at his severing connection with the Society in Jamaica. The Secretary was asked to convey the feeling of the meeting to Mr. Baxter. The membership of the Branch was increased by the enrolment of three new members. The meeting was closed with the singing of the National Anthem.

L. A. S. DAWES,
Secretary.

Sturge Town P.O.

Watt Town.—Meeting held 4th March, 1937. Present : Mr. C. E. Atkinson, President, in the Chair, and 13 other members. After the President's remarks, correspondence was taken and matters dealt with. Arising from the minutes, the following matters were discussed : White Yam Competition, the Pound, Appointment of Authorised Persons, Demonstration Plot for the Branch, a Grindstone. Report of Authorised Persons : J. Jackson and T. Parke reported "All Correct" for the past month. Plans for the Annual Meeting were made. A new member was enrolled. Roll Call was taken also collection of fees. The meeting was brought to a close by the singing of the National Anthem.

U. J. MILLS,
Assistant Secretary.

Watt Town P.O.

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OTHER REPORTS RECEIVED.

Branch and Secretary.	Date of Meeting.	Attendance.	Business.
Clarendon—			
Mt. Airey .. (M. E. A. Dawkins)	9.3.37	Over 26	Address by Instructor Virtue. Report of A.P.
Pleasant Valley .. (Mrs. A. A. Flyter)	16.2.37	Over 10	White Yam Competition. Banana Competition. Resignation of Mr. Baxter. Growing of potato and vegetables.
Hanover—			
Orange .. (E. S. Anglin)	11.2.37	16	Proposed outing to Grove Place. Ram. Correspondence. Address to the Instructor. Road.
Manchester—			
Mispah .. (U. C. Wolfe)	15.2.37	10	Irish potato demonstration plot. Ram. Report of Half-yearly General Mtg. Address on Vegetables by the Instructor.
Bellefield .. (Miss M. J. Morgan)	5.2.37	Over 13	Visit of Mr. F. E. V. Smith. Vegetables.
Portland—			
Claverty Cottage (D. Moore)	13.2.37	14	Routine matters.
Mahoe .. (S. Baugh)	16.2.37	24	Report of delegate to Half-yearly General Meeting. Routine matters.
Do. ..	18.3.37	..	Addresses by Messrs. Baxter and Hanson.
Central Portland (Abdule F. Spence)	27.2.37	12	Water supply. Address by Instructor G. R. Graham.
St. Catherine—			
Bowerswood .. (P. E. J. Davis)	11.3.37	10	Routine matters.
Wakefield .. (L. A. Ferguson)	2.2 37	35	Address by Mr. A. B. Jones.
Do. ..	2.3.37	22	Address by Mr. H. S. Francis, Agricultural Headman.
St. Elizabeth—			
Springfield .. (R. E. Witter)	5.3.37	11	Tobacco Expert. Country Fires Law. Instructor spoke on Peas and Tobacco plots at Temple Hall.
Do. ..	5.2.37	16	Mr. Wakeland, M.P.B., addressed the meeting.
St. James—			
Adelphi .. (A. McKenzie)	9.2.37	14	Cold Storage Plant. Address by Hon. A. B. Lowe on "Unemployment in Jamaica."
St. Mary—			
Baxter's Mtn. .. (R. J. Lawson-Ricketts)	16.2.37	14	Highgate Bananas. Black Spot Disease. Reports of Authorized Persons.
Do. ..	16.3.37	12	Mr. Baxter's resignation. Election of Officers. Authorized Persons.

OTHER REPORTS RECEIVED (contd.)

Branch and Secretary.	Date of Meeting.	Attendance.	Business.
Epsom .. (Fred. A. Edwards)	3.2.37	12	Address by Instructor. Land Settlement.
Free Hill .. (N. B. Falconer)	25.3.37	7	Address by Sgt. Major Bailey. Correspondence. Tobacco.
Mt. Regale .. (T. H Hannam)	5.2 37	..	Lecture by Instructor D. A. Jones. Black Spot Disease. Roads.
Do. ..	5.3 37	18	Mr. Baxter's resignation. Road. Authorised Persons.
St. Thomas— Hagley Gap .. (B. E. Singleton)	26 2.37		Water tank. Seed potatoes. Authorised Persons.
Pear Tree River .. (V. R. McLean)	24 11.36	6	Buttons. Knutsford Park Show. Coffee Suckers.
Do. ..	7.12.36	32	Market Fair. Knutsford Park Show.
Do.	19.1.37	10	Road. School. Minor Matters.
Do.	1.3 37	26	Coffee Competition. School. Homestead Improvement Competition.
Trelawny— Wilson's Run .. (L. E. Cowan)	9.2.37	166	Juvenile Branch. Mr. Baxter's Resignation. Address by Instructor M. N. Thompson.
Ulster Spring .. (I. C. Williams)	9.2.37	..	Authorized Persons. Annual meeting. Minor matters.
Spring Garden-Rock Spring (Miss L. M. Edwards)	11.2.37	Over 14	Correspondence. Knutsford Park Show. Address by the Instructor.
Granville (H. N. Fletcher)	..	Over 50	Citrus. Red Peas. Report of delegate to Half-yearly Genl. Meeting.
Wakefield .. (E. S. Bliss)	3.2.37	..	Dispensary. Correspondence.
Do. ..	3.3.37	..	Penny Bank. Resignation of Mr. Baxter.
Westmoreland— Caledonia .. (I. V. McPherson)	23 2 37	Over 12	Proposed visit to Grove Place. Address by Instructor F. W. Kelly
Haddo .. (A. M. Roberts)	1 3 37	30	Show at Haddo. Lectures by Dr. Arthurs and Fr. Vidal.
Porter's Mtn. .. (D. F. Bowen)	15.2.37	Over 19	Corn Competition. Address by Instructor Hastings.
Do. ..	15.3 37	29	Address by Mr. H. N. Plummer M.P.B. Correspondence. Minor matters.

THE JOURNAL

OF THE

Jamaica Agricultural Society.

The more people do the more they can do; he who does nothing renders himself incapable of doing anything; while we are executing one work we are preparing ourselves for undertaking another.

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BOARD OF MANAGEMENT.

The regular monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the offices of the Society, 10-12 North Parade, Kingston, on Wednesday, the 7th April, 1937, at 11.30 a.m. There were present: Hon. George Seymour Seymour, O.B.E., in the Chair; Mr. U. Theo. McKay, Third Vice-President, Messrs. Sidney Barton, Rudolph Burke, T. J. Cawley, C. O. Cover, T. P. V. McDaniel, and D. D. Phillips; A. P. Hanson, Supervisor of Instructors, and the Acting Secretary, P. St. L. Bacquie.

Rev. W. J. Thompson, Second Vice-President, joined the meeting shortly after it began.

Apologies for Absence.—

Apology for absence was submitted on behalf of Hon. A. C. Barnes, Director of Agriculture.

Confirmation of Minutes of the Previous Meeting.

Copies of the minutes having been sent to members of the Board, they were taken as read, and on the motion of Mr. Barton, seconded by Mr. Cover, they were confirmed.

Matters arising out of the Previous Minutes.

(a) *Statement by Secretary.* The Acting Secretary informed the Board that all correspondence consequent on the deliberations of the Board at their last meeting had been carried through.

(b) *Vacancy on Board of Management.* The Acting Secretary brought to the attention of the Board that there was a vacancy on the Board due to the resignation of Major A. R. Moxsy, and craved authority to issue advice to the Direct Members and Branches of the Society that election to fill this vacancy would take place at the next Half-Yearly Meeting in July, nominations to reach the General Secretary a fortnight prior to the meeting.

The necessary authority was given.

(c) *Position of Secretary.* The Acting Secretary stated that he would like to know the wishes of the Board in the matter of the position of Secretary made vacant through the resignation of Mr. Baxter.

After discussion it was decided that Mr. Bacquie should continue to act as Secretary until a decision was arrived at regarding the co-ordination of the Society with the Department of Agriculture, and that Mr. Hanson should be relieved of the Instructional work that he was carrying on, and this should be divided among the three Instructors in the adjoining districts, and do supervision of Instructors throughout the Island, receiving remuneration at the rate of sixpence per mile for travelling in the western section, to be authorized by the First Vice-President.

Statement of Accounts.

(a) *Statement for February.* The Acting Secretary stated that this appeared in the Minutes.

(b) *Statement for March* was also presented.

Mr. McKay asked if the amounts for alterations and additions to the Office Buildings were included in the Statement, and was answered in the affirmative

Questions.

Mr. Cover asked questions regarding the stock-taking, and was answered.

Office Committee Meeting.

The Acting Secretary requested that a meeting of the Office Committee be held to go into the question of the running of the Seeds Department, and also to discuss the methods of keeping the books with the object of arriving at more simplified methods as was suggested by the Board some time ago.

The Chairman promised to go into the matter, and, if necessary, call a meeting of the Office Committee.

Leave of Absence.

Application from Hon. H. A. L. Simpson, O.B.E., for 21st April to 15th July, 1937, was submitted and the leave approved.

Communications.

(a) *Memo from C.S.O. re Representatives to attend Thanksgiving Service on occasion of Coronation.* Memo from the C.S.O., No. 193/37, dated 23rd March, 1937, inviting three representatives of the Society with their wives to attend a Thanksgiving Service to be held at the Kingston Parish Church at 8 a.m. on the 12th May, 1937, on the occasion of the Coronation of Their Majesties King George VI and Queen Elizabeth, was submitted.

On the First vice-President stating that he would attend in another capacity, and the Second Vice-President stating that he would attend in the Parish of Portland, the Third Vice-President, Mr. U. Theo. McKay, along with Messrs. T. J. Cawley and Mr. Rudolph Burke, were chosen to be the three representatives.

The Acting Secretary was directed to advise the Hon. Colonial Secretary that Mr. and Mrs. McKay, and Mr. and Mrs. Burke, and Mr. Cawley would have much pleasure in attending the service.

(b) *Letter from Messrs. Lake and Nunes re removal of Apiary to Hagley Park Road.* The following was submitted:—

98 Tower Street,
Kingston, Jamaica,
30th March, 1937.

"Messrs. L. C. Myrie and G. W. Gregory have consulted us and they instruct us that they are the owners of premises No. 72 and No. 74 Hagley Park Road, respectively, adjoining which are lands which they understand are about to be rented by you for the purpose of conducting an apiary.

They consider that such a business would be detrimental to the comfort and health of themselves and their respective families. In addition, they claim that the conduct of such a business would be a breach of the covenants entered into by the owners of the lands in the neighbourhood and which covenants are noted on the titles for such lands.

We trust, therefore, that in order to avoid any unpleasantness and expense you will see your way not to conduct such a business.

We should be pleased if at your early convenience you would be kind enough to communicate with us accordingly."

(Sgd.) LAKE & NUNES.

Mr. Cawley said he understood that a bridge would have to be built to afford entrance for a truck or car to the site under discussion.

It was disclosed that all things considered the site chosen was not suitable for the apiary, and it was decided that the Acting Secretary and the Bee Instructor, along with the Supervisor of Instructors should go into the whole matter and see what arrangements could be made to secure a more suitable site, a report in this connection to be made to the next meeting of the Board.

(c) *Letter from Messrs. Manton and Hart re Incorporation of Society.* Letter dated 19th March, 1937, from Messrs. Manton & Hart, was presented stating that they regretted that so far they were unable to ascertain with any degree of finality, what steps, if any, the Government would take in the matter of the Constitution of the Society. They believed, however, that the Government were not averse to introducing legislation in this connection, and suggested that the Board authorise them to draft and submit to Government a short Law for giving legal entity to the Society, and also submit to the Government draft Rules and Regulations of the Society.

The Acting Secretary was directed to find out from the Solicitors what would be the probable cost of the preparation of the documents they suggested.

(d) *Letter from C.S.O. re Accounts for Printing.* The following letter was read:—

10th March, 1937.

No. 482/37.

"I am directed to bring to the notice of your Society that the cost of printing done by the Government for the Society during the last Financial Year, amounted to £843 17s. 10½d., being £789 9/- for the Journal and £54 8s. 10½d. for miscellaneous printing. This amount is considered unduly high and the Government will be glad if your Society will consider ways and means of effecting substantial economies.

2. In this connection I would point out that the record of the Half-Yearly Meeting of the Society, held on the 11th January, 1934, occupied 58 printed pages; that of the 25th July, 1935 occupied 65 pages, whilst that of the 23rd July, 1936, occupied 64 pages, supplemented by a further 34 pages by reason of an adjournment to deal with proposed amendments to the Rules of the Society. If these Records were examined it would doubtless be found that they could be considerably reduced without destroying any of their utility by omitting full reports of speeches and remarks and confining them generally to the business transacted at the meeting. The same remarks apply to the minutes of the meetings of the Board of Management, which could be considerably reduced in volume without sacrificing their usefulness.

3. There is also a tendency to publish material which has already appeared in various reports and newspapers available to the public. As an example of this, I would point out that the Jamaica Banana Commission's Report, which has been published by the Government and which has appeared in the Daily Gleaner was republished in the Society's Journal.

4. It should be borne in mind that although the Journal is published free of cost by the Government, the revenue derived from its sale, and the advertisements published therein goes to the credit of the Society.

5. I am to ask that the whole position may be examined at an early date with a view of effecting economies on the lines indicated herein."

(Sgd.) J. D. LUCIE-SMITH,
for Colonial Secretary.

Mr. McKay said possibly something could be done along the lines of reducing articles appearing in the Journal, as suggested by Government, but Government should understand that the Journal was the means of disseminating agricultural knowledge to people in the Colony who did not read the Gleaner or the Jamaica Gazette. One of the greatest statesmen of the West Indies, Sir Arthur Farquharson, stated that the small settler, taken collectively, contributed more to the export trade of Jamaica than the large planter, and therefore he did not think that Government should begrudge the expenditure on the Journal which benefited the large as well as the small planter. Government should do all possible to encourage agricultural progress, and latterly increasing interest had been manifested in the Journal. He was of the opinion that Government did not appreciate the value of the Journal to the small agriculturist.

Mr. Cawley said he considered the Journal of the Society the most important agricultural organ in the Island, but he was of the opinion that much could be done along the lines suggested by Government in regard to the reports of the Half-Yearly Meetings and in a smaller way in regard to the minutes of the Board of Management. He did not consider it necessary to record long speeches made by individuals.

Mr. McDaniel said his opinion was that the Half-Yearly Meetings should be fully reported. Government could economise more effectively in matters that were not as beneficial to the Island as was the Society.

The Chairman said he was quite willing to make an effort on behalf of the Board to carry out the directions of Government.

Mr. Cover said while minutes were a record of decisions arrived at, they should be so written that a party who was not present at the meeting would understand what actually took place. He further suggested that the matter should be referred to the Office Committee.

This suggestion was agreed to.

(e) *Letter from C.S.O. re "The Country Fires Law, 1902."* Letter No. 1711/28 of date 13th March, from the C.S.O. covering copy of a letter addressed to the Hon. C. A. Reid in regard to the enforcement of the Proclamation under Law 17 of 1902, "The Country Fires Law, 1902," prohibiting the setting of fire to land, and requesting that the Society would co-operate in the manner indicated in the letter, was presented, and noted.

(f) *Memo re correspondence from Inspector General of Police suggesting prosecution of an Authorized Person under Law 53 of 1908.*

The Acting Secretary read the following Memo, signed by the former Secretary of the Society:—

Kingston,
15th March, 1937.

To the Board of Management,

The attached correspondence from the Inspector General of Police suggesting prosecution of an Authorized Person under Law 53 of 1908 (Law attached), is placed before you for consideration.

2. There is some question in my mind whether an Authorized Person should be regarded as an agent of the Society, or of the Police. Their appointments are made by the Governor on the recommendation of the Police.

3. I am also to remind you that the Incorporation of this Society has not yet taken place.

(Sgd.) GLAISTER BAXTER,
Secretary.

The Acting Secretary stated that the correspondence referred to indicated that an Authorized Person had committed a breach of Law 53 of 1908. Evidence was collected to bear out the statement, and it was now suggested that the Society should prosecute the Authorized Person.

Mr. Cawley stated that in view of the fact that Authorized Persons were nominated by Branch Societies and appointed by the Inspector General of Police, it was the duty of the Police Department to make the prosecution.

It was agreed that the Acting Secretary should communicate to the Police Department in the terms of Mr. Cawley's comment.

(g) *Booklet from Department of Agriculture* advertising Jamaican Fruits, was presented, and appreciation of it was expressed.

(h) *Letter from St. Elizabeth Branches Associated re loan of Bull from Hope.* This letter conveyed a request from the St. Elizabeth Branches Associated that the Stud Bull now stationed in South St. Elizabeth, be transferred to the Newmarket Area.

The Acting Secretary was directed to get particulars regarding the service of this Bull in the South St. Elizabeth Area and report to the Board, so that a decision could be arrived at as to whether it was now desirable to make the transfer requested.

(i) *Memo from Holly Hill Branch re Cane Farming.* The Acting Secretary was directed to circulate to the Board this memorandum dealing with the Cane Farming Industry.

(j) *Request from Mt. James Juvenile Branch for grant of Vegetable Seeds* to encourage members in the laying out of their plots, was submitted.

The Acting Secretary was directed to advise that the seeds would be supplied at half-price.

Reports from Committees.—

(a) *Special Committee re Co-ordination of Agricultural Field Services in relation to Agricultural Policy of Government and needs of Island.* Regarding this matter the Acting Secretary was directed to send copies of the Committee's Report to the members of the Board, and place it on the Agenda of the next regular meeting.

(b) *Instructors.* The following was presented:—

7th April, 1937.

To the Board of Management:

Gentlemen,

Your Instructors' Committee met this morning and beg to recommend the following:—

1. That the work of zoning by Instructors should now be spread out over the whole month instead of on four consecutive days each month, but reports of such surveys must be sent in monthly.

2. That Instructor Henderson be granted two weeks leave from 3rd April, on Doctor's certificate.

3. That application for affiliation from the Windsor Forest Branch, in Portland, be granted.

(Sgd.) G. SEYMOUR SEYMOUR, Chairman.
(Sgd.) P. ST. L. BACQUIE, Acting Secretary.

Mr. Cawley asked when Instructor Henderson last had leave, and was told. He also asked that the Doctor's certificate referred to, be submitted. This was done.

On the motion of the Chairman, seconded by Mr. Barton, the Report was adopted.

Mr. Cawley asked that his dissent regarding the change of the zoning surveys be recorded.

(c) *Shows.* The Secretary stated that the meeting of the Shows Committee, called for that morning, fell through for want of a quorum.

Diseases of Plants and Animals: Insect Pests.

(a) *Panama Disease of Bananas—Report for January.* The Acting Secretary presented the Report on the Incidence of Panama Disease during the month of January, and stated that copies had been sent to members of the Board.

(b) *Mosaic Disease of Sugar Cane Order,* 1936 was laid on the table.

Shows.

(a) *Letter from Hanover Branches Associated,* asking the Board to reserve the 1st of August, 1938, as the date of a Show to be held at Lucea; and another letter stating that the necessary deposit would be lodged were submitted.

The Secretary was directed to advise the Association of Branches that as soon as the deposit was made the Board would make a decision in the matter.

Mr. McKay pointed out that it was necessary for the Society to take steps to bring about proper organization ofShows run under the ouspices of the Society.

(b) *Application for Exchange Branch* for Easter Monday or Ash Wednesday, 1938, for the holding of a local Show, was considered, and the Board was in agreement with the suggestion that the Show be held on Easter Monday.

Resolutions from Branches.

New Roads re Amalgamation of Society with Department of Agriculture. This resolution asked that the Government be asked not to put into effect the proposal that the Society be amalgamated with the Department of Agriculture.

This was noted.

(b) *Central Portland re Butchers and Small Stock.* This resolution conveyed the reques(that the Government be approached with a view of bringing about legislation requiring that Butchers of Small Stock obtain permits for butchering animals, and that purchasers of small stock obtain receipts for stock purchased.

The Chairman pointed out that it was known that a considerable amount of robbery could be carried on under the present system, and although the matter had often been represented to Government, nothing had been done to bring about better conditions.

After discussion it was decided that the Acting Secretary take up the matter with the Inspector General of Police and ask for his observations on the subject, and then the Board would see if they could make recommendations to Government.

(c) *Brompton re embargo on Omolene.* The Acting Secretary was directed to advise the Branch that the matter had already been dealt with by the Board when a decision against the proposal was arrived at.

(d) *Fairfield re Protection of Birds.* This Branch asked that the Law against the killing of birds be strictly enforced.

The Acting Secretary was directed to refer the resolution to the Police Department.

(e) and (f) *Georges Plain and Snowdon re Resignation of Mr. Baxter.* These resolutions recorded the regret of the Branches at the resignation of Mr. Baxter, the former Secretary of the Society, and the Acting Secretary was directed to forward copies of them to Mr. Baxter.

(g) *Richmond Park re* (i) *Government Savings Bank,* (ii) *Telephone Office.* These resolutions asked for the establishment of a Government Savings Bank in the district, and the installation of a Telephone in the Post Office.

The Acting Secretary was directed to refer them to the Manager of the Government Savings Bank and the Postmaster for Jamaica, respectively.

(h) *Rock Hall (Portland) re visits of D.M.O.* This resolution asked that representations be made to have the District Medical Officer visit the Rock Hall District, in Portland, to carry out the vaccination of children.

The Acting Secretary was directed to forward the resolution to the Superintending Medical Officer.

(i) *Adelphi re Road.* This resolution asked that representations be made to bring about the asphalting of the road through the township of Adelphi.

The Acting Secretary was directed to send same to the Parochial Board of St. James.

New Members.—

The following were elected to the membership of the Society:—

Harold Smith, 28 Northumberland Lane, Franklin Town, Kingston.

Mrs. Angelina Lang, 6 Lucas Street, St. Georges, Grenada, B.W.I.

J. V. Garcés Navas, Manager Co-operative Bananera del Magdalena, Limitada, Santa Marta, Rep. de Colombia.

R. C. Mais, 64 Harbour St., Kingston.

H. E. Winch, 100 Tower St., Kingston.

Arthur Russell, Malvern.

Other Business.

(a) *Report from Department of Agriculture re Soil Erosion in Blue Mountain Range.* Letter from the Director of Agriculture covering Report from the Agricultural Chemist, on the subject of Soil Erosion in the Blue Mountain Range, was submitted for the information of the Board, and with the request that the Report be published in the Journal.

The Report was received and the Acting Secretary requested to publish same in the Journal.

(b) *Letter from Messrs. I. C. Maynier & Co. re Awards of Government Contracts to members of Chinese race.* This letter brought to the notice of the Board that the prices of Agricultural Produce contracted for were being continually cut down, and that this aspect was encouraged by Government.

The Acting Secretary was directed to collect data on the matter from the firm, and circulate all the information to the Board.

(c) *Application from C. A. Crearer* for an increase of salary, was referred to the Office Committee.

(d) *Letter from Porus Branch re Agricultural Headman.* This letter expressed appreciation of the services of a Headman who had worked in the district, and asked that such services be continued.

It was decided that if it was possible the request of the Branch should be granted, and the Secretary was directed to take up the matter with the Supervisor of Instructors.

(e) *Resolution from Ewarton Branch* expressing appreciation of Mr. Baxter's services as Secretary of the Society, was submitted and the Acting Secretary directed to forward copy to Mr. Baxter.

(f) *Invitation from Clarendon Branches Associated* to the members of the Board to attend the Annual Meeting of the Association on the 16th April, was submitted and noted.

(f) *Proposal re Decoration of premises for Coronation.* The Acting Secretary submitted a proposal made by an artist re decoration of the premises for the Coronation period, but the Board regretted that they had no funds to defray the expenditure for this.

(g) *Poisonous Weed (Lantana).* The Acting Secretary stated that with regard to a statement made by a visitor to the Island regarding a poisonous weed which he had seen in the Island, Instructor Darby had forwarded specimens of what was alleged to be the plant. This was exhibited.

The Acting Secretary was directed to forward the specimens to the Department of Agriculture.

The meeting then adjourned to Wednesday, the 5th May, 1937.

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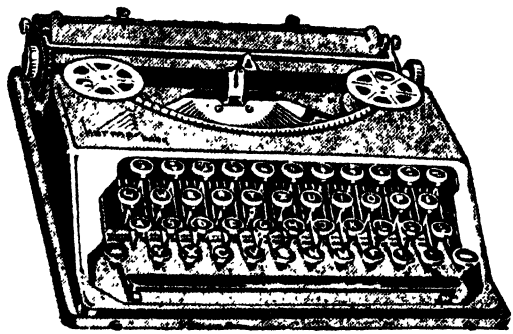
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Manager.

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RECENT DEVELOPMENTS IN THE TOBACCO INDUSTRY OF JAMAICA.

Address delivered by Hon. A. C. Barnes, C.M.G., B.Sc., (Hons.) F.I.C., A.M.I. Ch. E., Director of Agriculture at the Half Yearly Meeting of the Clarendon Branches Association at Chapelton on April, 16th 1937.

The Director, in his address, said:

"Public attention has from time to time been called to the Tobacco Industry of Jamaica, and in particular to the desirability of encouraging the production of leaf tobacco for export. This crop has long been a feature of Jamaica's agricultural activity, but production has varied remarkably from year to year and exports of the unmanufactured leaf have in some years been almost negligible, while in others they assumed considerable proportions, as the following 10 years' returns will show:

TOBACCO EXPORTS.

(*Local Production.*)

Year.		Total lbs.	Value £	Exported U.K.	Value £
1927	...	8,380	333	3,192	79
1928	...	15,241	348	nil	—
1929	...	2,229	156	nil	—
1930	...	3,694	204	nil	—
1931	...	10,579	656	8,838	474
1932	...	34,034	1,996	33,653	1,972
1933	...	76,219	4,734	74,363	4,614
1934	...	31,183	1,561	29,939	1,492
1935	...	29,229	1,871	27,545	1,775
1936	...	31,946	1,465	25,593	1,312

"Thus it will be observed that exports to the United Kingdom were nil in 1928, 1929 and 1930, while in 1933 no less than 74,362 lbs. valued at £4,614 were exported to the United Kingdom.

2. "There are considerable areas of land in Jamaica, particularly in this parish (Clarendon) eminently suited for the production of heavy crops of tobacco, which when properly processed commands ready sale in the United Kingdom. During the past few years the Government has paid much attention to the expansion and development of agricultural industries, among which is tobacco. In 1934 a Committee which was formed to consider the subject of tobacco development, recommended that a Specialist be obtained for a period of 3 years, and that Government should embark upon a definite programme of work in connection with this crop. In the following year several tobacco importers in the United Kingdom some of whom were manufacturers, and one a large bonded Warehouse Keeper, began to take a renewed interest in Jamaica as a source of cigar leaf tobacco for the United Kingdom market. Discussions took place in London with a view to ascertaining the extent of that market, and the prices likely to be realised, while investigations were made with a view to securing the services of a suitable experienced officer to fill the appointment of Tobacco Specialist. Early in 1936 Mr. F. W. Winkley, who came on the scene of these activities late in October, 1935, and who had had 25 years experience of tobacco production in Sumatra, visited Jamaica to survey the posibilities of embarking upon organised production of cigar leaf tobacco.

3. "The Agricultural Development Board which had been appointed a few months earlier took the opportunity of consulting Mr. Winckley, and as a result formulated a scheme for the development of tobacco growing for export on a considerable scale, to be financed from loan funds. This scheme received the approval of the Secretary of State and of the Legislative Council of Jamaica. It provides for a 3-year programme of production, processing, and marketing and includes provision, not only for the Specialist, but for the training of Tobacco Instructors, two of whom have since been appointed and have now almost completed one season's experience.

4. "The appointment of Mr. F. W. Winckley was approved and he arrived in the island early in July, 1936, to assume duty. Three demonstration centres were decided upon in the parish of St. Andrew,—one at Hope, one at Cherry Garden, and one at Temple Hall. At these centres the production of several types of cigar leaf was embarked upon purely from the investigation and demonstration points of view.

A further object was the provision of seed of good quality for future planting. Tobacco barns were erected at each centre and considerable interest was displayed both by tobacco growers and the general public in the work undertaken there.

5. "In order to encourage the production of Leaf Tobacco for export by experienced growers, financial assistance was provided to selected persons having suitable land, under agreement made under the Agricultural Loans Law, 1887, and several such contracts were made in this parish, particularly at Rock River and in the Lower Rio Minho Valley at York Pen. In all 19 growers controlling 119 acres, came into this scheme. Their season's crop is now in process of being delivered to the tobacco grading fermenting and packing station, which was erected near to Kingston and opened on the 15th February.

6. "An essential to the success of the whole scheme is the organised processing, packing and marketing in addition, of course, to the growing of the crop from good seed with the best cultural methods. The 'Tobacco Station' as it is called, consists of two buildings,—one of which is new and the other a repaired, thatched earth building which has stood on the site for many years. There is also a caretaker's house and necessary outbuildings. The object of this station is to provide a place where all tobacco for export can be dealt with. Tobacco leaf which has been produced by contractors and others who desire that it should be processed and sold by the Government, is delivered to the station where it is first examined to see that it is not too wet. It is then weighed, and in accordance with general practice, a deduction of 10 per cent. from the weight is made to allow for excess moisture. It is perhaps, unnecessary to go in detail through the various processes to which the tobacco must be subjected before it is fit for export. These will be described to anyone who is interested and arrangements will be made from time to time for persons who are interested in the production of tobacco for export to visit the station and see for themselves exactly what is done.

7. "The whole object of the scheme is to establish firmly Jamaican cigar leaf tobacco in the large market of the United Kingdom and in order to do this it is necessary to adopt standards of quality and size, as well as special methods of packing in order that buyers may be assured of regular supplies of tobacco leaf of uniform quality which is suited to their particular manufactures. It is only in this way that we have any hope of securing a firm and permanent place in the tobacco market of the United Kingdom.

8. "Considerable attention has been drawn by certain interested persons to the regulations for the export of unmanufactured tobacco which were published in the Jamaica Gazette Extraordinary of Monday 15th February, 1937, the day on which work commenced at the new Tobacco Station. The whole reason for these regulations is to establish standards of quality of tobacco which the market requires. The particulars which have been laid down in Regulation 14 have been decided upon as a result of conferences in London between officials of the Government and representatives of the tobacco trade. They therefore indicate clearly the grades of tobacco which the market requires and although difficulty will be experienced in adhering closely to this during the first season, it is necessary, as soon as possible, to bring about full standardization as above all it is hoped that this season's work will call the attention of importers and manufactures to the excellent qualities of Jamaican cigar leaf tobacco and that as a result we shall succeed in securing a permanent place in the market.

9. "The table already given shows that there has been intermittent export of our leaf tobacco to the United Kingdom for several years, but numerous complaints have from time to time been made in regard to the absence of any uniform standards of quality and the complete lack of grading. The tobacco industry in Jamaica has to meet competition from other countries where a high degree of organisation has been brought about, and as with other commodities, we are faced with the necessity of meeting the Competition by doing everything possible, to bring about quickly the necessary improvements and standardisation of quality of our export products. We are, perhaps, rather prone to look upon these things too much from the purely local point of view, and to think that because "rough and ready" methods have been good enough in the past, there is no reason why they should not be continued. That, however, is the sure way to failure, and I am certain that there is no one present to-day who will not agree with me that the improvements in the quality of various kinds of produce exported from Jamaica which has been brought about as a result of persistent efforts during the past few years, are beneficial both to the island as a whole and to the individual growers.

10. "It is a principle of agricultural work to-day that it is useless to encourage the production of any particular crop unless that crop can be sold, and sold in a market which will give a reasonable return to the grower. The Agricultural Departments of to-day not only in Jamaica but in other parts of the Empire, give more and more attention to the combined problems of production and marketing, whereas in former years they devoted perhaps too much time to production problems, leaving marketing questions to merchants and others. Here again we have another reason for the tobacco regulations. The haphazard methods of the past cannot be permitted to continue if Jamaica is to secure the place which the quality of its tobacco justifies it to expect in the market to which it can supply, and so it is necessary to introduce and enforce regulations intended to help this industry as a whole, from Jamaica's point of view.

11. "There may be one or two persons who have formerly exported tobacco when supplies have been available at a reasonable cost and markets overseas sufficiently attractive, who feel that the control now being exercised under the Agricultural Produce Law, 1926 is too drastic, mainly because it seems likely to interfere with their business.

In the first place it should be noted that the regulations apply to cigar leaf tobacco which is intended for export for the purposes of manu-

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facture in the United Kingdom. Reference to Regulation 16 will show the actual wording.

"In past years there have been considerable exports to other countries and the business which merchants may have built up with these countries will in no way be interfered with, though it seems fairly safe to assume that importers in those countries will expect to receive tobacco of similar quality to that which is sold in the United Kingdom. I believe that before very long merchants will realise that the Government scheme will prove to be to their interest as well as in the interest of growers; but I would make it quite clear that the primary consideration is the welfare and the prosperity of the growers, and that although merchants are necessary, and perhaps desirable as channels of communication, as it were, between the grower and his market, one object of the scheme is to secure as high a return to the grower as possible.

12. It has also been said that the price which growers may expect to receive under the Government scheme is too low. This is due to a misunderstanding. The subject must be looked upon from a broad point of view—as we so often say, from the Island point of view. Bearing in mind the desirability of increasing Jamaica's export both in quantity and value, and of doing everything possible to ensure the prosperity of Jamaica as a whole, it will, I think, be clear that we must envisage large scale production, the whole of which can be sold with a minimum of delay at a price which will return a reasonable remuneration to the grower. Now, it is true that for small parcels of perhaps a few thousand pounds of leaf tobacco, better prices can be obtained than for the whole of the exportable output of Jamaica. The position is something like that of the man who owns, shall we say, 50 citrus trees, which, if well grown and cared for would give him about 250 boxes of fruit in a year. When the market is good he probably receives an offer of 5/- per case at a time when his trees are not all bearing mature fruit and he is able to reap and sell perhaps 50 boxes of his fruit at that price, thinking that he has done well. Later the main crop comes in, the market falls, and he is fortunate if he gets 1/- per box for the balance. Averaging his total output for the reason, it will be found that he secures 1/7d per box over the whole crop. Now applying this Tobacco, we find that 5 or possible 10,000 lbs. of leaf tobacco could be sold at c.i.f. price of perhaps 1/6 per lb. whereas the average price likely to be realised for the total output of exportable leaf tobacco this year will be about 1/1d. as the market price according to grade and quality ranges from 1/- to 1/4. per lb.

13. "Now, is it not better to sell 100,000 lbs. at 1/1d in London, than to sell 10,000 lbs. at 1/6d?

14. "A further important point is that it is necessary to dispose of the whole crop. Tobacco is not a commodity in which Jamaica can expect to exercise any kind of market control whatsoever, and from the grower's point of view the safest course is to make the best arrangements possible for selling the complete output at the best price.

It would be highly dangerous, and would involve heavy losses if such satisfactory arrangements were not made at the beginning of the season. As we all know, the storage of tobacco involves the risk of considerable losses from insect attack and the sooner the crop, after it has been processed and packed, can be despatched to its destination, the better it is going to be for all concerned. That is the reason why arrangements have been made to sell all the tobacco produced under the Government scheme to one large importer in the United Kingdom, who has been selected after consultation with high Government Officers in England.

This importer will, both in his interest and ours, do everything possible to bring the merits of Jamaica Cigar Leaf Tobacco to the notice of manufacturers in the United Kingdom. He is now responsible for securing as wide a distribution of our production as possible, and in short, for launching it on the market on our behalf.

15. "Turning to the one or two individuals who have expressed disagreement with the regulations, I am glad to point out that there is nothing in the regulations which would prevent an exporter who is not under contract with the Government from processing and packing his tobacco in accordance with the requirements of the regulations. In that case he would merely deliver his packed tobacco to the Government Station where it would be examined, and if in every way satisfactory, passed by the Tobacco Inspector as being fit for export. Tobacco is a commodity which cannot be examined in the open, such for example as on the wharf, and it has, therefore, been necessary to appoint the Tobacco Station to be the place at which this work should be done. This arrangement is in strict accordance with the provisions contained in the Agricultural Produce Law.

16. "Exception has also been taken to Regulation 7, which requires that persons purchasing, or acquiring unmanufactured tobacco for export must first obtain a permit in writing from the Director of Agriculture. The reason for this is, I have no doubt, obvious to any one who has had anything to do with contracts made with growers under the Agricultural Loans Law, and it is merely intended to protect the interest of the Government in the crops produced by growers who have been financially assisted during this season. A small exporter could, as I have already pointed out, sell a limited quantity of tobacco at a better price than will be obtained for the full output under the scheme and could thus, although I do not say that this is what goes on, tempt a tobacco grower by offering a higher figure for a small quantity than is likely to be obtained under the Government scheme.

17. Although the regulations appear to be complicated they are in fact really very simple, and any of you who desire them to be explained in greater detail can be furnished with whatever information he may want. In short, I will repeat that they are to standardize the quality of Jamaica tobacco and help to secure for it a permanent place in the market of the United Kingdom, which it deserves.

18. "There is just one final point upon which I desire to touch before closing. The Tobacco Development Scheme is the first of several schemes which have been prepared and approved by the Agricultural Development Board. Apart from their effect on production, I hope it will be borne in mind that they help to provide employment. Thus, for example, the new Tobacco Station near to Kingston which was not in existence last year now gives employment to a considerable number of persons, principally young women and girls, whose numbers vary from 50 to 90 per day, and that employment will continue for a period of several months. Indeed, if production increases, as we hope it will, work at the Tobacco Station will continue practically the whole year round. In addition to this, the financial assistance given to the 19 growers, and the establishment of the experimental and demonstration plots, to which I have already referred, also provide employment for a considerable number of persons. Thus, it will be realised that not only are schemes such as this one bound to exercie a benefical effect upon growers, but they will also help to provide more employment for various classes of working people both on the land and elsewhere.

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THE CONTROL OF INSECT PESTS BY MEANS OF INSECTICIDES.

(By W. H. Edwards, D.I.C., F.E.S., Government Entomologist, Jamaica.)

(Continued from the April Journal).

MILLIPEDES.

Nature of Damage:

The stem and lower leaves of young plants, still in the seed beds or newly set out in the fields, are frequently attacked by brownish elongated caterpillar-like creatures which possess hundreds of legs.

By chewing the soft tissues of the plants they not only cause direct mechanical injury but are also responsible for the development of rots that ultimately cause the wounded plants to die. Such damage is more pronounced with seedlings growing in damp soils, rich in organic matter.

Habits and Appearance of the Pest:

Millipedes feed mostly on decaying vegetable matter which they find amongst rotting leaves, in farm yard manure rich in straw, etc., and constant humidity is favourable to their development.

As under local conditions lands cultivated under truck crops are as a rule continually kept damp by constant irrigation and as an abundance of organic matter is found amongst the thick layers of plant material used for mulching and also in farm-yard manure applied to the soil, millipedes frequently become exceedingly abundant, and cause considerable damage, in vegetable and in flower gardens.

As that pest is frequently mistaken for the larvae of insects or for centipedes, the following short description will enable the layman to identify the pest.

The body of millipedes consists of series of segments covered with a hard skin of brownish colour, these segments are typically cylindrical and are not flattened as they are in the case of centipedes. In the millipedes each visible segment of the body bears two pairs of legs, their legs are therefore more numerous than in the case of centipedes, and especially with the larvae of insects which never possess more than three pairs of true legs situated at the anterior end of the body.



Fig. 11. A Millipede. The body consists of a series of rings or segments which each bears two pairs of legs.

Control:

Millipedes are difficult to control economically when infested areas are extensive and once the plants have been established. It is therefore always advisable to give the greatest attention to the application of measures aimed at preventing infestations.

When seeds are grown in boxes, use only uninfested soil and manure; therefore do not place the seed boxes directly on the ground or on stones as under such conditions the pest finds humidity and ideal shelter under the boxes themselves.

Where the pest commonly occurs in destructive numbers, seed boxes should be placed on bamboo frame works easily built, and isolated from the ground as explained under Ants.

When removing seedings from infested nurseries to the fields or garden make certain that no infested soil is transported amongst the roots of the young plants.

This pest which, as aforesaid, breeds in decaying vegetable matter, is usually found in great abundance in the heaps of plant refuse left to rot alongside fields or in proximity to truck crop gardens. They are also found in great numbers in stacks of well rotted farm-yard manure rich in straw. It is usually from such breeding places that they invade cultivated plots, and it is advisable never to leave stacks of such materials in proximity to susceptible plants

In the drier parts of the Island where plantations have to be heavily manured, mulched and irrigated, measures taken to promote vigorous growth of truck and garden plants create conditions that are ideal to this pest. Special attention should therefore be given in the application of those cultural operations to minimise the danger of promoting or of intensifying infestations

With that aim in view, when preparing the grounds where truck crops are to be cultivated, the fields should be kept free of weeds and the soil thoroughly worked with the plough for as long as economically possible before the plants are set. During that time the soil should also be kept dry by laying the trench for drainage in advance.

Whilst the pest will thus have been controlled in the fields to be planted, care should also be taken not to introduce it with manure nor with the soil surrounding the roots of the seedings.

As millipedes are frequently present in large numbers in the well seasoned manures and especially in the material scattered around the edges of manure stacks, such should not be used in seed boxes nor for manuring fields.

The pest is not usually present in actively fermenting manure such as is found in the central parts of well made stacks so that it is advisable to use only such material for manuring plants susceptible to the attacks of the pest.

In localities where the pest is prevalent it is also advisable not to apply large quantities of farm-yard manure until the plants have passed the stage when they are likely to suffer severe injury.

When replanting infested fields, burn all plant refuse, mix the ashes with the soil and provide the young plants with nitrogenous plant foods in the form of artificial manures, preferably Sulphate of Ammonia which has a mild repellent action on the pest.

When plants have passed the vulnerable stage, uninfested farm-yard manure can be applied in any amount desirable.

If the planted area is restricted, and in the case of seed boxes, nurseries, etc., the pest can be destroyed by drenching the soil thoroughly with diluted Jeyes-Kerosene-Soap Emulsion prepared as described under Ants, or with a solution of Mercuric Chloride, ½ oz. to 4 gallons of water.

In the fields the poisoned bait recommended against cutworms can also be applied against millipedes.

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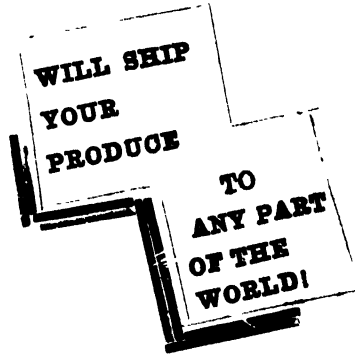
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Cutworms.

Nature of Damage:—It frequently happens during the night that young plants still in the seed beds or newly set in the fields have their foliage partially eaten or their stems completely severed near ground level. Such damage is done by caterpillars known as 'Cutworms'; they have been so called on account of their peculiar mode of attack on plants which they generally attack at ground level.

Appearance and habits of the Pest:—When the soil around young plants so damaged is carefully searched greyish caterpillars which curl themselves into a loop as soon as disturbed, will be found buried into the soil at a depth of about two inches. The pieces of leaves, etc., which those caterpillars often carry down with them into their burrows, sometimes help to reveal where they are hidden.

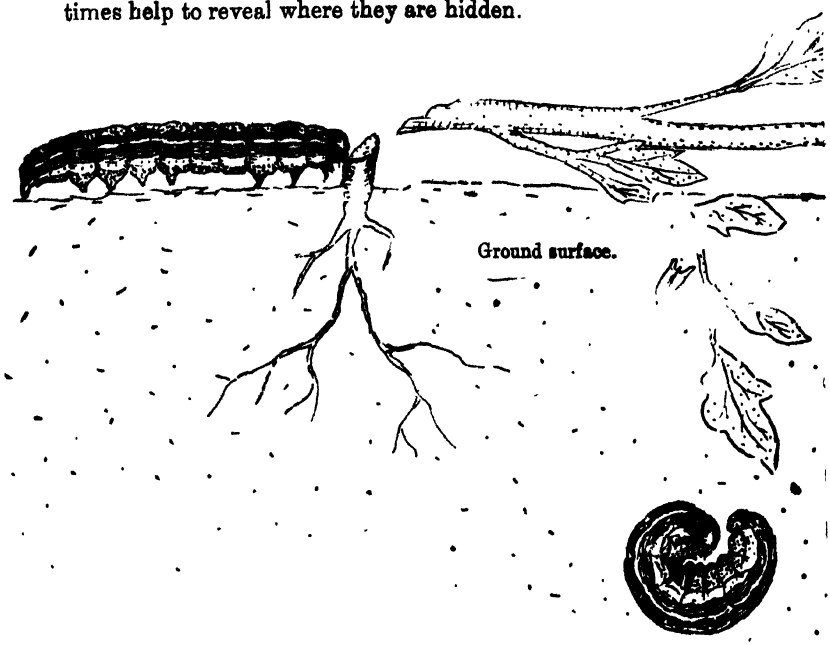


Fig. 12.

A Cutworm attacking a plant at ground level during night time. Cutworm as found during day time buried into soil near its food plant.

Cutworms are the larvae of those night-flying moths which are commonly found flying around lamps in houses. During the day time they remain under leaves, etc.

The moths are of medium size, dull-coloured, thick-set. Their forewings have an expanse of one inch and a quarter to one inch and a half, and bear yellow, brown or black markings on a sombre coloured ground; the hind wings which are shorter than the anterior ones are pale coloured with a greyish tinge. The species which in Jamaica commonly attack cultivated plants are: *Prodenia ornithogalli*, Guen., *Xylomiges sunia*, Guen. and *Lycophotia infecta*, Ocks. As the life history, appearance and feeding habits of these insects are very much alike, for the sake of brevity they will be discussed in a group.

These moths lay their eggs on the underside of leaves or grasses, of weeds and also of cultivated plants. Each female may lay as many as 400 eggs; she covers them for protection with scales taken from the base of her abdomen. The eggs hatch after four to seven days.

Whilst still young the caterpillars creep down towards the base of the plants on which they are hatched and bury themselves in the soil where henceforth they remain hidden during day-time, to come to the surface only at dusk to feed during the hours of the night.

After two or three weeks these caterpillars having attained a length of one and a quarter to one and three quarter inches, are ready to transform themselves into the adult or moth stage. Having taken all the food they require they cease to feed and remain in the soil where they construct certain earthen cells in which they pupate.

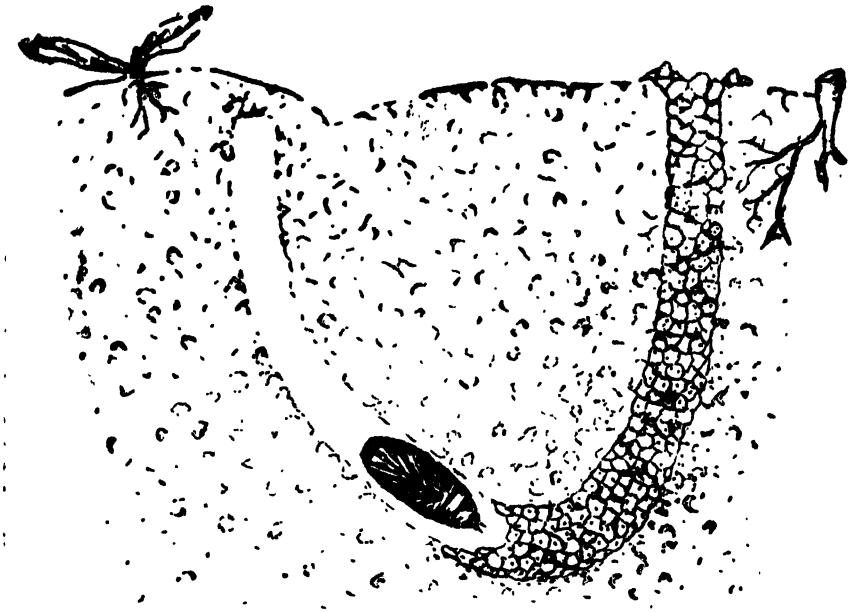


Fig. 13.—Pupa of Cutworm.

After a period which according to climatic conditions varies from ten days to three weeks, the moths emerge from their chrysalises and crawl to the surface of the soil where after mating they lay eggs that give rise to another generation of destructive cutworms.

Distribution and Incidence of outbreaks in Jamaica:—

Feeding on grasses and on weeds as well as cultivated plants, cutworms are common in all localities but destruction of crops by this pest is always more severe in plots surrounded by grass lands or in fields brought under cultivation after they have been left fallow for some time.

When 'ruinate' lands, after having been merely cleared of weeds are immediately planted, without having been previously thoroughly ploughed, the cutworms which exist in the soil now deprived of the weeds on which they are feeding, divert their unsatisfied appetite to the young crops causing wholesale destruction.

Like several of the lepidopterous pests, cutworms in Jamaica become very numerous after spring or autumnal rains break protracted periods of drought. The main reasons for such seasonal increases of the population of this pest, is that their natural enemies perish in numbers during long periods of drought whilst the pupae of the pest, buried in the soil, withstand such adverse conditions.

The moths which emerge from the pupae which have survived lay

large numbers of eggs and in the absence of their natural enemies the pest rapidly becomes very abundant. Such outbreaks continue until the progeny of the few natural enemies which have survived have reproduced themselves in sufficient numbers to check once more the multiplication of the pest.

Preventive Measures:

As, for reasons mentioned above, atmospheric conditions influence the abundance of the pest, growers should give special attention to the time of planting as in Jamaica the climate varies greatly in different localities and as the periods of drought are also very irregular, it is not possible to make general rules; truck crop growers, however, by making observations in their own districts would rapidly acquire valuable experience in that connection.

Preparation of the land by thorough ploughing during the dry seasons and before the plants are set into the fields, will also, by exposing the pest to adverse conditions, greatly contribute to its destruction.

Curative Treatment:

When Cutworms have made their presence noticeable in the plantations they can be destroyed in large numbers by placing around the plants they are likely to attack baits which have been poisoned.

The capture at night of the parent moths by means of lamp-traps is not recommended, because such traps have been found to attract and cause the destruction of a large number of beneficial insects and moreover because it has been ascertained that when attracted by lights, males or old females which have already laid their eggs are in majority.

Plants such as tomatoes, etc., on which the young larvae feed, should be sprayed with a stomach poison such as Lead Arsenate. See p. 353 of the June-July, 1936 Journal.

(To be Continued.)

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SOIL EROSION IN THE BLUE MOUNTAIN RANGE.

(*By* H. H. CROUCHER, *B.Sc., A.I.C., Agricultural Chemist, Hope.*)

2. Destruction of forests and a clean cultivation are proceeding rapidly up the hill sides. There is now considerable cultivation above the 5,000 ft. contour. In several cases the crests of the ridges have been cleared and cultivated. There is a tendency to use the steepest sloping land immediately beside the streams and rivers. This type of land is particularly susceptible to soil washing.

3. The Yellow Raspberry and the 'blue weed' (wild Iris) which were the subject of considerable abuse in letters to the Department some time ago, are performing valuable work in re-covering land very rapidly after it has been abandoned. Without their assistance, I think that the soil erosion problem in this area would be even more serious.

4. I notice small attempts to counteract the soil-washing problem on the part of the coffee planters. These include:—

(1) Mulching—a practice which could be extended with considerable benefit.

(2) Planting Overlook Beans. In the cases observed, these beans were planted far too thinly and appear to be forming only a partial cover.

(3) Digging trenches on the upper sides of fields to prevent soil and stones washing over the top soil of the field. This soil washing causes considerable loss, probably more than that caused by the washing of soil away from the fields. Unfortunately, some of these trenches have been badly placed, i.e., not along the contour, and badly designed, i.e., without stops in them. In one case the trench was rapidly forming itself into a new gully.

5. The cultivation of skellion which is the chief crop in this area is particularly inducive to soil washing. The crop is shallow-rooted. It necessitates the land being cleared and disturbed at the end of the dry season and immediately before the heavy rains occur.

6. I do not see, however, how the clean cultivation can be avoided, and therefore other means to minimise soil washing will have to be adopted. The following precautions are suggested:—

(1) By making small terraces in places where the slope of the land lends itself to this treatment, either by pegging the logs felled from the area along the contours, or by leaving small strips of uncultivated land. These terraces or strips will not only hinder soil movement, but also act as *nucleii* for re-covering the land with natural vegetation when it is abandoned after cropping. The value of blind trenches on these soils is doubtful, but a useful type might be found following experiments. The usual type might induce slipping and possible concentration of flow of water.

(2) By leaving strips of uncultivated land, preferably in natural forest, of say 1 to 2 chains wide, running along the contours at intervals, say, of 5 chains. These strips would also act as a *nucleii* for re-covering the land.

(3) By leaving alive all trees over a certain girth, say 12 ins., at 1 ft. distance from the ground. At present these trees are killed by fire or cutting, but I see no reason why they cannot be lopped back in such a manner that they remain alive without producing undue shade. In the present conditions, when the land is abandoned, it is covered by a low mixed bush of Yellow Raspberry, Bracken and 'Blue weed' (wild Iris). While these provide fairly rapid and adequate cover they tend to hinder

the establishment of young trees, which can only be done artificially with considerable labour and cost.

If the larger trees were left they would form protection and shade for young forest trees, which would probably spring up naturally around.

(4) By prohibiting any cultivation for say 1 chain, either above or below a path or road cut in the hill side. A large number of land slides appear to originate immediately above or below such paths.

(5) By prohibiting any cultivation within a certain distance of the crests and ridges, and possibly by prohibiting any cultivation above the 5,000 ft. contour.

(Sgd.) H. H. CROUCHER.
1.4.37.

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FOOD, HEALTH AND VITAMINS.

(By DONALD MACDONALD, Accountant, Jamaica Agricultural Society.)

This is not intended to be a review of that excellent little book, "Food, Health, Vitamins," by Professor R. H. A. Plimmer and Violet G. Plimmer, a copy of which may be seen at the Institute of Jamaica. It's title has been borrowed in appreciation of the fact that no more inspiring beginning could be suggested for the series of talks, which the book consists of, on the all-important subject of how to select the proper foods so as to live healthily and banish most of those ills that seem to follow in the wake of our present-day civilization.

This feeble attempt to check the tendency of the inhabitants of this Island to forsake their own native grown foodstuffs for the refined and processed articles imported from abroad, under the mistaken idea that they are in some way superior, follows on similar lines, and it is hoped that those who take the trouble to read these articles will wake up to the fact that a large number of us are living in a state of contented ignorance, where our food is concerned. This may be proved in part by reflecting how readily other more civilized countries snap up our Bananas, Citrus Fruits, and latterly, considerable quantities of fresh vegetables and small fruits, namely, Sweet Peppers, Eggplants, String Beans, Tomatoes, Mangoes, Golden Apples, etc. We, in turn, are increasing our imports of the very foods which those abroad are beginning to condemn in favour of a more rational diet consisting of foods which the manufacturers and canners have as little to do with as possible. Within the past few years the word Vitamin has come into much prominence as something having a vital influence over our food—the absence of which exposes us to various forms of undernourishment, and lowers our capacity to ward off diseases and some of the minor ailments such as Colds, Teeth decay, Lassitude and lack of energy.

To attempt to describe how Vitamins perform these beneficial effects in our bodies would be too tedious and perhaps uninteresting. We are willing to accept what Science tells us—that without Vitamins we would soon die, and that those who will not take the trouble to get their full requirements are only half alive, and always suffering from some minor ailment. What we want to concern ourselves with is how to supply our bodies with the proper amount of these very essential substances.

To begin with, there are no less than six different types of Vitamins—perhaps more—and each one has its own work to do. Busy people do not take kindly to masses of statistical data, so we will first list these Vitamins in a simple manner and state briefly against each one the special effects which they produce when absorbed through careful selection of foods.

Vitamin A.

Whenever our diet falls short of Vitamin A, we become exposed to danger of catching colds. Influenza germs and other infectious germs are better able to invade the tissues of the delicate membranes of our bodies. Vitamin A erects a barrier against infection by strengthening the membranes and keeping them healthy. Growing children need plentiful supplies of Vitamin A. Lack of this Vitamin also causes certain eye diseases and impairment of vision. No one can hope to feel well if through ignorance he deprives himself of his proper share.

Vitamin B, also known as Vitamin F.

This Vitamin helps us to maintain healthy nerve condition. It promotes a healthy, normal appetite and proper functioning of the digestive tract—a most important necessity. Nursing mothers should ensure that there is no risk of shortage in their dietary, at the same time taking special care that baby gets his share too.

Vitamin C.

This Vitamin prevents the disease called Scurvy, and maintains the blood in good, healthy condition by strengthening the blood vessel walls. It helps to keep teeth and gums in good order. Shortage of this Vitamin causes occasional aching in the joints, which is often mistaken for rheumatism.

Vitamin D.

Vitamin D is essential for bone formation and preservation of the teeth from decay, as it regulates the use of Calcium by the body. Its absence causes Rickets. Eight cases of rickets are recorded in our hospital returns for 1935.

Vitamin E.

Vitamin E aids the life and growth of babies before birth, helping to produce strong, healthy offspring.

Vitamin G.

The main characteristics of this Vitamin is its value in preventing skin diseases, especially that complex disease known as Pellagra. Our Hospital Returns show that over 46 cases of Pellagra were treated in 1935, and in view of the difficulty in determining what is really the cause of this dread disease, no one should run the risk of exposure to this malady. A properly balanced diet is of great importance.

Less Salt Fish and more fresh lean Meat should be consumed. Ever since the year 1600, Pellagra has been associated with the use of too much Maize in the diet, no doubt on account of the fact that the disease appeared to be more widespread in areas where maize forms an important part of the diet. Used along with other cereal products on a large scale, is not considered safe.

We now have a nodding acquaintance with those modest but all-important friends—the Vitamins—and it should be our duty to seek them out wherever they are and use them for our own benefit. If we neglect them we are sure to lose out in the long run. So let us get acquainted with the various foods where they are known to abound in sufficient quantities.

The following list of Foodstuffs has been prepared by a distinguished Research worker, Col. McCarrison of the Indian Medical Service, which is especially valuable for the reason that many items produced in the tropics do not show as high a Vitamin content as in temperate countries, and *vice versâ*.

It will repay you to study this list carefully and to make every effort to include more of the Vitamin-bearing foods in the daily menus.

Symbols are used to indicate to what extent Vitamins are present in each food; so that—

Three Crosses (†††) mean "very rich source."
Two Crosses (††) mean "moderately rich in."
One Cross (†) means "some, but not very much."
V.L. means "very little."
0 means "none at all."
— means "doubtful" or "not yet discovered."

Name of Food.	Vitamins. A	B	C	D
Milk and Milk Products.				
Cow's Milk	†††	††	†	†
Condensed Milk	†	†	0	—
Cream	†††	†	—	†
Skimmed Milk	†	†	†	—
Goat's Milk	†††	†	†	†
Flesh, Meat, Eggs.				
Lean Beef	V.L.	†	V.L.	†
Lean Mutton	V.L.	†	V.L.	†
Goat's Flesh	0	†	V.L.	0
Pork	0	†	0	—
Bacon	0	—	—	—
Liver	†††	†††	†	†
Kidney	††	††	—	—
Brain	†	††	—	—
Tongue	0	†	—	—
Fat Fish (Herrings, etc.) ...	†††	†	—	—
Non-Fat Fish (Cod)	—	†	—	—
Fresh-water Fish	—	†	—	—
Chicken	†	†	—	—
Duck	†	†	—	—
Pigeon	†	†	—	—
Egg	††	†††	—	†
Oysters	††	††	†	—
Fish Roe	††	††	—	—
Shrimp	†	††	—	—
Animal Fats.				
Beef Fat and Mutton Fat ...	††	—	—	—
Butter	†††	—	—	†
Lard	0-V.L.	—	—	—
Cod Liver Oil	†††	V.L.	—	†††
Fish Liver Oil	†††	V.L.	—	††
Vegetable Oils.				
Coconut Oil	†	0	0	V.L.
Olive Oil	V.L.	0	0	—
Margarine	†	0	0	—
Sugar and Starches.				
Sugar Cane	—	†	†	—
White Sugar	0	0	0	—
Brown Sugar	0	0	0	—

Name of Food.	Vitamins. A	B	C	D
Honey	V.L.	V.L.	0	—
Tapioca	0	0	0	—
Sago	0	0	0	—
Cereals, Grains and Bread.				
White Flour	0	V.L.	0	—
Polished Rice	—	V.L.	0	—
Wheat	†	††	0	—
Unpolished Rice	V.L.	†	0	—
Barley	†	††	0	—
Oatmeal	†	††	0	—
Maize (Yellow)	††	††	0	—
White Bread	0	†	0	—
Semolina	†	†††	0	—
Peas and Beans.				
Fresh French Beans	†	††	††	—
Fresh Broad Beans	†	††	††	—
Dried Peas	†	††	0	—
Dhals (Split Peas)	†	††	0	—
Nuts and Seeds.				
Coconut	†	††	0	—
Ground Nut (Peanut) ...	V.L.	††	0	—
Walnuts	V.L.	†††	0	—
Almonds	V.L.	††	0	—
Other Nuts	V.L.	††	0	—
Root Vegetables and Tubers.				
Potato	V.L.	†	††	—
Beetroot	V.L.	†	†	—
Celery	—	†††	††	—
Onions	V.L.	††	†	—
Garlic	†	†	††	—
Carrots	††	††	††	—
Turnips	V.L.	††	†	—
Yams	—	†	†	—
Sweet Potato	††	††	††	V.L.
Fleshy Roots (Cocoes, etc.) ...	—	†	†	—
Leeks (Scallion)	†	†	††	—
Radishes	V.L.	†	†	—
Green Leafy Vegetables.				
Lettuce	††	†††	††	—
Spinach	†††	†††	†††	—
Turnip Tops	†††	†††	††	—
Cabbage	†††	††	†††	—
Brussels Sprouts	†	†	††	—
Other Vegetables.				
Tomatoes	††	†††	†††	—
Cucumbers	—	†	††	—
Pumpkins	—	†	†	—
Eggplant	—	†	†	—
Cauliflower	†	†	†	—

Name of Food.	Vitamins. A	B	C	D
Okra	—	†	†	—
Kohl Rabi	V.L.	†	†	—
Asparagus	†	†††	†	—
Fresh Fruits and Berries.				
Apples	—	†	†	—
Bananas or Plantains ...	V.L.	†	†	—
Mangoes	†	—	††	—
Guavas	—	†	†	—
Oranges	†	†	†††	—
Grapes	—	†	V.L.	—
Lemons	—	†	†††	—
Pineapples	—	—	††	—
Water Melons	—	—	†	—
Papaw	†	†	††	—
Pomegranates	—	†	†	—
Dried Fruits.				
Apricots	—	—	0	—
Currants	—	0	0	—
Dates	—	†	0	—
Figs	—	†	0	—
Prunes	—	†	0	—
Raisins	—	†	0	—
Tamarinds	—	†	†	—
Miscellaneous.				
Jams	0	0	0	—
Marmalade	0	0	0	—
Infant Foods (tinned) ...	—	—	0	—
Treacle	0	0	0	—
Tea	0	0	0	—
Coffee	0	0	0	—

The principal sources of Vitamin E are from Fresh Lettuce (not stale imported stuff), also Spinach and Water Cress, Fresh Meat and Animal Fat, also the germ oil of Cereals and certain Vegetables.

It is important to bear in mind that vegetables having a green or yellow colour are richer than the paler ones. The pale, blanched, imported Lettuce is inferior to fresh, locally grown Lettuce, and Sweet Potatoes are richer than the white, imported Irish Potatoes.

A good deal of the commercialized canned foodstuffs are of poor quality in their original state, and by the time they reach your table, are so "devitaminized" that they are of little use in maintaining health. Why then insist on eating foods which only satisfy the appetite but fail to fulfil the most important function?

In studying our list we see that White Bread and White Flour are extremely poor in Vitamin content. This is because the flour has been "improved" and refined to "death" through bleaching so as to produce that fine white appearance which we seem to prefer. Polished Rice also shows up poorly, but it is an astonishing fact that our Rice and Flour imports are going up steadily each year. During 1936 we imported 40,372,817 lbs. of Rice, valued £167,637, which was an increase of 3,070,473 lbs. more than the year before. Flour also rose from 79,352,364 lbs. in 1935 to 82,991,496 lbs. in 1936.

A most interesting comparison is the Vitamin contents of Fresh Cow's Milk compared with Condensed Milk.

Last year we imported 7,994,120 lbs. of Condensed Milk, which at the retail price of 5d. per lb. shows that no less than £166,544 was spent by the public on one item of food which is so very inferior to the home-produced article, and which even the poorest can produce himself with very little effort.

We owe it to the rising generation, even if we are too indifferent to bother about ourselves, to teach them how to eat correctly, and not in a haphazard way which seems to be the case when we find ourselves consuming 82 lbs. per head of Flour in one year, 40 lbs. of Rice, and 14 lbs. of Imported Corn Meal. It is a responsibility we cannot evade if we are to hold our position as worthy citizens of a great Empire.

In conclusion, let us record our appreciation of the invaluable services rendered by that tireless band of Research Workers scattered throughout the world, from whose work and writings it has been possible to present these facts which may help to provide us with a working knowledge of those questions which are so important to us in our everyday life.

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4—Roadside and Salem.
5—Cave Valley Market, calling at Alexandria.
10—Bamboo Village.
12—Ocho Rios Market, calling at St. Ann's Bay.
17—Nelson and Chester.
19—Moneague Market, calling at Claremont.
24—Beecher Town.
26—Brown's Town Market.
July.
1—Coulthart Grove.
3—Brown's Town Market.
8—Dry Harbour Mountains.
10—St. Ann's Bay Market.
15—Lime Hall and Higgin Town.
17—St. Ann's Bay Market.
22—Lewis District.
24—Cave Valley Market, calling at Alexandria.
29—Pimento Walk.
31—Cave Valley Market, calling at Alexandria.
August.
5—Dry Harbour District.
7—Claremont Market.
12—Alderton
14—Ocho Rios Market calling at St. Ann's Bay.
19—Priory and Salem.
21—Moneague Market, calling at Claremont.
26—Bamboo.
28—Brown's Town Market.

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BULL SAVANNA VEGETABLE GROWERS' ASSOCIATION—SECRETARY'S REPORT, 30TH APRIL, 1937.

To the President and Members of the Vegetable Growers' Association.

Ladies and Gentlemen.

Again the wheel of revolving years has brought us to the close of another year, devolving on me the customary duty of reviewing the activities of the past year and formulating schemes for the success of the ensuing year To me the duty this year is no less a pleasure than it was last year—indeed the pleasure is greater, because a greater measure of success has deservedly crowned the operations of the year just ended, as indeed it should.

Perhaps for the benefit of the stranger, it might be well to refer briefly to the constitution of this organisation before delving into its operations of the year just closed. Less than five years ago the long defunct branch of the Jamaica Agricultural Society here was resuscitated with a membership of less than fifty. Subsequent years however, saw an increase, and for a time the energies of the Branch were expended along the customary channels of general district improvements such as the acquisition of improved road facilities, medical attention, institution of Registration Office, the distribution of poor relief and other such matters as Branch Societies generally regard as among their main objectives. But our Branch had a vision--a vision that was to direct its progress along untrodden pathways into a field unexplored before even by the most enterprising agricultural communities, and the chain of circumstances which led up to the exploration of this field is the happiest of the many happy recollections of this association; yet no less happy is our combination of leadership, at the head of which stands our benefactor, Major Moxsy, which has piloted us through the shoals of want and despair to a haven of hope.

Two years ago in pursuit of our dream we communicated with Mr. D. D. Phillips, at whose advice we invited the Major to one of our meetings, with a view to launching out in this Vegetable Industry. Upon the latter's suggestion we formed a Growers' Association which we decided to run in conjunction with our Branch. The amalgamation was by no means undersirable; and yet the honest straightforwardness of the Major's advice did not, as we had hoped, leave the growers enthused· the majority of these expected to have been told of El Dorado where dollar pieces could be stoned from tomato trees, and half crown bits picked up for the mere stooping. Hence it was, that we commenced with just a handful of eight growers which at the expense of considerable energy and encouragement increased slowly beyond the fifty mark. With this number most attempting less than a square chain we had our commencement in the fall of 1935. It was from these plots that we shipped away some two and a quarter tons of tomatoes and thereby proved beyond reasonable doubt the possibility of growing this commodity on a commercial scale and at a reasonable profit. Such, then, is the brief history of the earlier life of our Association: of its development and subsequent achievements it is the intention of this report to review in greater detail.

1. Abdication.

Before doing so, however, I should like to record the Association's extreme regret at the passing into private life of perhaps the greatest

King the nations have yet seen—H.R.H. the Duke of Windsor; and to record with corresponding joy and loyalty the accession to the throne of his brother, His Gracious Majesty King George VI. May the same devotion and adulation which the nation extended to the former be diverted to the present King, and may he continue to win his way into the hearts of his subjects beyond the seas as did King Edward VIII. It is not at all an idle gesture for us as an Association though small and insignificant to give public expression of our profound desire and determination as a body to remain loyally devoted to our reigning Sovereign and to pray unceasingly that the Guiding Hand of the King of Kings may continue to direct his course through a world such as ours torn with inhuman warfare and deeds of brutal carnage.

2. Membership.

The present membership stands at one hundred and eighty three which represents an increase of two hundred per cent. on that of the previous year's. It is pleasing to note that with very few exceptions none of our old comrades dropped out, except those too far away to maintain a profitable membership and those who have been removed from our midst by the "dull, cold hand of death." Among these we record with no small degree of sorrow the passing of Mrs. Elnorah Lewis, Messrs Allan and Edmund Dyer, Ernest Francis, Bernal Simpson and Leslie Holness to whose sorrowing relatives we extend our deep and sincere condolence

In this connection, it might not be out of place to mention the severe loss which the parish and island have sustained in the recent demise of our beloved and revered Custos, the Hon. A. E. Harrison, B.A., whose interest in the economic welfare of the struggling masses was at once colossal and unusual. One bears personal recollection of the great readiness he always displayed in giving help, encouragement and advice to those who sought such of him; as well as the noble part he played in the distribution of relief after the hurricane of 1933. So unselfish a life is one indeed worthy of emulation.

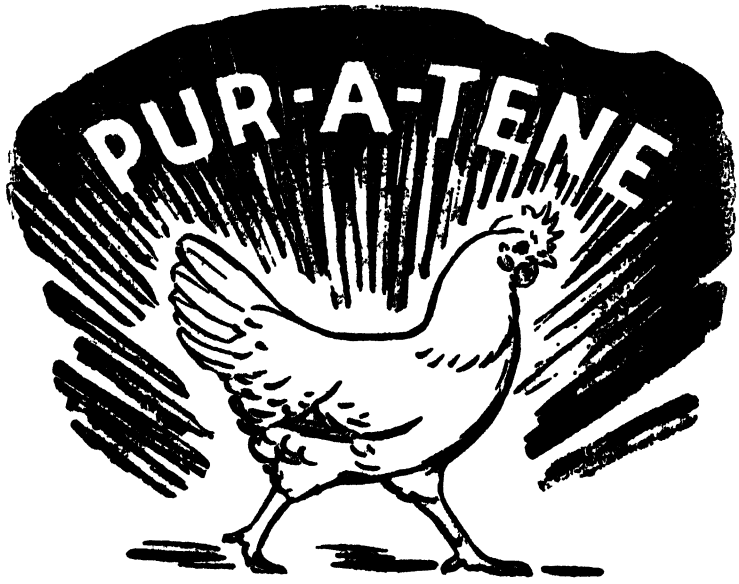
3. Visitors.

During the year we were honoured by the visit of such distinguished personages as Mr. Frank Holloway of the firm of Mutual Brokers, Montreal, who handle our fruits in the Dominion market and his friend Mr. Turner of the Canadian Bank of Commerce also of

AGRICULTURISTS!!!

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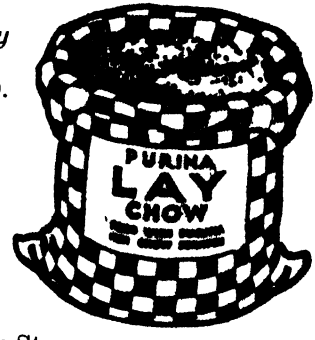
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Canada. Other visitors were Messrs. A. G. Robinson of Longhill, E. J. Smith, B. B. Coke, and F. H. Jones. The Revd. R. J. Fleming of Bethlehem showed marked interest in the enterprise during a short visit to the packing shed. These visits have been a tremendous incentive to us, and Mr. Holloway's strikingly so, not only because of the sound advice which he gave, but more so because of the considerable personal inconvenience at which it was made. To one and all we desire to record our profound appreciation.

4. Achievements.

During the year this combine focussed its attention on a certain objective without undue neglect of those other matters that have stood by us in times past; and this objective was the development of the Vegetable Industry on lines already tested and approved. Nothing succeeds like success, and the success which attended the efforts of the previous year had paved the way for increased success in the subsequent year. In the year 1935-36, we planted fewer than eight acres of tomatoes only; the year 1936-37 was to see an aggregate of some forty acres under cultivation, thirty acres of which were under tomatoes alone, the rest egg plants and peppers.

Let us not imagine, however, that the seeds are merely sown, the seedlings planted out, and the crops reaped. Considerable labour and thought have to be expended in combating successfully the many troubles and difficulties which are natural corolaries to the growing of vegetables in this area. In the first place, our early sowings were entirely exterminated by a vast army of locusts which massacred the seedlings not only in the nurseries but so soon as they were planted out in the fields. In this way thousands of seedlings disappeared every night and despondency and despair followed in the wake of their destruction. Every available insecticide proved futile in stemming the onslaught and for a time we fought a losing battle. Yet with the knowledge which experience brings we resorted to our own remedies and conquered in the end. The battle was stiff while it lasted, but we eventually saw our fields serving the purpose for which they were intended—growing vegetables with remarkable vigour.

Perhaps that period of disaster was the most critical in the life of this combine. In it, the enterprise was to have been made or marred; it was made. Yet tremendous energy and tact were required at this time to keep the members together—members whose one desire now was to return to their old crops—and the Secretary's personal visit to the fields of 137 growers, making suggestions here and enthusing renewed interest there went a far way in tiding over the good ship through the dangerous breakers. Visits which took him some ten miles away from home, must it should be imagined, have been made at some personal expense. But the end justifying the means, such expenses have paled into insignificance.

It is with much regret that we record the failure of the Board of Management of the J.A.S. to grant us the help we solicited. Their refusal to give us an headman forced upon us the duty of providing one at our own expense and thanks to the aid of Major Moxsy we were able to do so in anticipation of the returns from our crops. To him must go the expression of sincere gratitude which we would just as copiously have addressed to the Parent Society in our dire need.

Between the 20th February and the 26th instant, this combine has shipped to Canada under the name of "Suttons Brand" just under

two thousand crates of tomatoes, egg-plants and peppers. The amount of tomatoes shipped aggregates more than twenty-five tons and within that short space of nine weeks just under three hundred and twenty pounds were advanced to growers for fruits supplied.

When it is remembered that this is the first district in the island to grow vegetables on so large a commercial scale; when it is remembered that this has been done without ostentation, or blare of trumpets when it is remembered that all this has been accomplished within the drought area there seems justifiable reasons for congratulating ourselves on our success; and we desire to lift our hands in gratitude to Our Creator for the blessing He has brought to us. Nor is our claims to success based on the ground of our own opinion I wish at this point to read extracts from the unsolicited report of our brokers in Canada which I am sure will serve to discredit any accusations of conceit. (Reads extracts.) We cannot help feeling some degree of justifiable pride in this report revealing as it does the excellence of the quality of our fruits and the keenness of our selection and packing.

5. Our Needs.

(a) An Instructor: Having achieved such remarkable success on our own, it would seem to me we have qualified ourselves for a moral claim on some government aid. Our plans for next season are extensive and if we are to continue to succeed we shall need a very, very competent Agricultural Instructor whose undivided services should be ours for at least five months of the year. The incidence of worms has been our gravest problem. Our losses from these pests are definitely above fifty per cent! This is undesirable. If the Board of Management would be prepared to second a reliable man for service here, we on our part would be willing to bear a portion of the cost of engaging headmen to carry out the work under him. In this we are not aware of having asked too much.

(b) Packing Shed: Our present packing shed erected by our combine through the benevolent assistance of Major Moxsy although much larger than this school being 50 x 20 has proven itself altogether inadequate to deal with the operations of the past year and in the ensuing year it will be much more so. In anticipation of this further development, we desire to approach the government with a request for a loan for the purpose of erecting a steel shed large enough to accomodate next season's output. This loan could be repaid by Government levy of a few cents per box of fruit shipped over a reasonably extended period. With an industry that is worth hundreds of pounds to a struggling people and with a Governor as sympathetic as is His Excellency, Sir Edward Denham, one can visualize the material realization of our proposal.

(c) At present our road facilities are at a discount. No laden truck of fruits can negotiate the hill leading into this district without considerable difficulty and expense. Under the circumstance a deviation seems an absolute necessity. Then the road linking us with Ballard's Valley is a vital artery of this industry. It is to be regretted that although a goodly portion of it had been constructed by our Branch our parish Board has not yet seen its way to complete the couple of chains that are left. However, it is to be hoped that this will be done with as little delay as possible in order that intending growers in our neighbouring district may be facilitated.

(d) Post Office: The need of a Post Office in close proximity to this district has been making itself felt with increasing poignancy. The days seem long past when one had to ascend and descend a series of dangerous cliffs and wade waist high through sometimes a swiftly running stream in order to receive and despatch one's mails, or in the alternative to make a long detour totalling a distance of twenty-two miles for the same purpose. It does seem unfair to us to have our claims repeatedly overlooked while others with little or no claims at all are having Post Offices placed at a distance two miles apart. We do not mean to lay down our arms until we have obtained our objective.

(e) School Extension: This combine view with much dissatisfaction the unfortunate conditions obtaining in our school. For upwards of two hundred and eighty pupils on roll accomodation is provided for just over one hundred. No teacher could labour under more unsatisfactory conditions and we venture to express the wish that immediate attention be given by the Government to this phase of our educational life.

While dealing with the subject of Education, it might not be amiss to address a few words of congratulation to Mr. R. W. O'Neil Speid on his promotion to the Assistant Inspectorate. As one who has always identified himself with our interests here, he shall be greatly missed, but there is compensating joy in observing that honour is done to our deserving friend.

Conclusion.

Before closing this Report, I desire to give public expression even at the risk of incurring his displeasure, of our deep and sincere gratitude to Major A. Rupert Moxsy, M.C., J.P. for the unsurpassed and unparallelled interest he has displayed in us a neglected people, a forsaken people, yet a people struggling to eke out what was known to be a miserable existence. The work he has done amongst us is beyond the power of words adequately to describe, and any failure on our part to express repeatedly our gratitude to him is due to our regard for the abhorrence we know he has for personal acclamations and praise. It is such modesty that marks the life of an unselfish, and self-sacrificing character. Long may he live to labour amongst us and to continue his plans for the economic welfare of his less-favoured fellow countrymen.

And now friends, with a confidence born of real, genuine achievements let us assemble our courage, our tenacity, our skill, our faith and face the future with a determination to conquer

"And we shall find, whatever our trials
As our day so our strength shall be."

QUARREL NOT AT ALL.

No man resolved to make the most of himself can spare time for personal contention. Still less can be afford to take all the consequences, including the vitiating of his temper, and the loss of self control. Better give your path to a dog than be bitten by him, in contesting for the right. Even killing the dog would not cure the bite."

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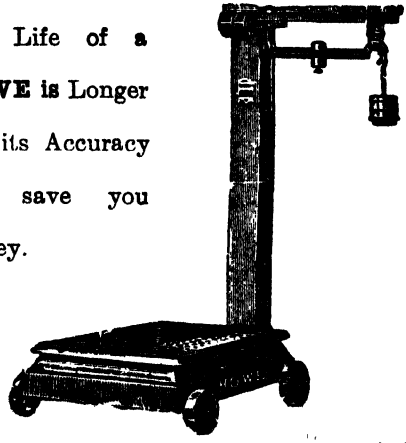
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We reproduce below extracts from the Journal of the Department of Agriculture of South Australia on Mottle Leaf of Citrus, by A. G. Strickland, M. Agr. Sc. Chief Horticulturist, which should be read with great interest by citrus growers in Jamaica. This trouble affects citrus trees all over the world, and it will be good to realize that there is now a method likely to deal effectively with it.

At the same time it must be realized that mottle-leaf can be caused by different agencies mechanical damage to the roots for instance, and in each case treatment has to be different.

MOTTLE-LEAF OF CITRUS—PRELIMINARY NOTE ON CORRECTION IN SOUTH AUSTRALIA WITH ZINC SPRAYS.

(By A. G. STRICKLAND, M. Agr. Sc., Chief Horticulturist.)

The field work referred to hereunder has been conducted by N. S Fotheringham, Manager, Experimental Orchard, Berri, and District Horticultural Advisers J. B. Harris, E. Leishman, and C. G. Grasby. H. K. Kemp, B. Ag. Sc., Research Officer, has been responsible for the photographic work.

Citrus mottle-leaf or foliocellosis has been noted in various citrus-growing districts throughout South Australia, the disorder occurring under varying soil, climatic, and cultural conditions. Specific occurrences of mottle-leaf have been under observation in such dissimilar districts as Berri, Waikerie, Mypolonga, and Beetaloo Valley, and although a variation in intensity of the trouble has been noted, the general symptoms have been similar in each area.

As has been the experience in the United States, there appears to be in South Australia a number of indirect causal or contributory factors associated with the mottling; very heavy infestation of tree roots with the Citrus Nematode (*Tylenchulus semipenetrans*) was found to be associated with cases of mottle leaf occurring at Berri, Waikerie, and Beetaloo Valley, thus confirming the observations of *Thomas, in California. Affected trees at Beetaloo Valley, in addition to being heavily infested with citrus nematode, were located in soil containing injurious salts (notably sodium chloride) at concentrations generally considered inimical to maintenance of thriftiness.

Neither heavy nematode infestation nor excessive soil salinity were obviously associated with the incidence of mottle leaf at Mypolonga.

At Beetaloo Valley, steps were first taken to correct the position in regard to soil salinity the grower being advised to vary his irrigation practice in such manner as to aim at downward leaching of salt, and to safeguard against further undue saline accumulations in the surface soil.

In other centres where citrus nematode was the chief associated factor, the position initially appeared to be very difficult; owing to the nature of the citrus nematode, no direct measures against this pest could be suggested. There is abundant evidence that on suitable soils, and where good cultural practices are employed, citrus trees may be maintained in good health, despite the presence of citrus nematode on their roots. That is to say combat of citrus nematode must consist in ensuring that soil and cultural factors are as favourable as possible.

*Thomas, E. E., 1913: "A preliminary report of a nematode observed on citrus roots and its possible relation with the mottled appearance of citrus trees." Calif. A.E.S. Circ. 85, 14 pp. 8.

Recent investigations in America have indicated that mottle leaf may often be related to deficiency of zinc, whatever indirect contributory or secondary factors may be operating; or at least, that the mottle leaf condition may, in many cases, be rectified by application of zinc compounds. Various factors frequently associated with mottle leaf—such as citrus nematode infestation, soil salinity, lack of soil humus, &c.—may be partially contributory. The exact relations of these factors still remain to be determined, but as treatment with zinc has been so widely successful in other countries, experiments have been conducted with zinc compounds in several South Australian districts.

First attempts to supply zinc to citrus trees suffering from mottle leaf consisted of direct applications to the soil of zinc sulphate; although this method was usually effective, it was also dangerous and frequently resulted in injury to treated trees.

When citrus trees are sprayed with zinc compounds, the leaves are able to take up appreciable quantities of zinc, and there is little or no danger of tree injury. Experimental work in South Australia has been confined to the application of zinc-containing sprays.

Symptoms of Mottle Leaf.

The leaves show irregular yellow chlorotic areas between the main lateral veins, the part surrounding the mid-rib and lateral veins usually remaining green. The result is an irregular mottling, and where trees are but slightly affected, little or no effect on tree health or cropping may be noted.

Experiments in South Australia.

The chief experiments on mottle-leaf control have been carried out at Berri, but check plots have also been sprayed at Waikerie, Mypolonga, and Beetaloo Valley.

During March, 1936, individual trees were treated in rotation as follows:—

1. Sprayed with zinc sulphate 10 lbs., hydrated lime 5 lbs., skim milk 3 galls. per 100 galls. of water.
2. Sprayed with zinc sulphate 5 lbs., hydrated lime 2½ lbs., skim milk 3 galls. per 100 galls. of water.
3. Not sprayed.

At this time, root specimens were taken from the trees under test, and examination of these specimens showed that the trees were heavily infested with citrus root nematode (*Tylenchulus semipenetrans*).

Results.

A slight improvement in the appearance of sprayed trees was noted in June, 1936, and this improvement became more marked as the season progressed. In spring, the difference was readily visible, trees sprayed with both levels of zinc showing a more thrifty appearance, and throwing out healthy growth. The improvement was consistent, all sprayed trees exhibiting better health, and all unsprayed trees remaining severely mottled and non-thrifty. The sprayed trees carried heavier bloom, and it was also noted that the restricted blooming of unsprayed trees was irregular and retarded.

A second series of sprays was applied early in October, the half-strength zinc-lime mixture being substituted on this occasion by a spray of zinc oxide—3 lbs. per 100 galls.

An interesting feature of this trial is the fact that despite heavy nematode infestation, and the extremely unhealthy condition of fibrous roots—apparently sufficient to account largely for the non-thrifty condition of the trees—zinc treatment has resulted in remarkable improvement.

This suggests that zinc sprays may be stimulative, rendering the trees more vigorous, and better able to grow normally in association with the root nematode.

Clark Powell and Mathews have recorded in South Africa, that mottle-leaf affected trees, five months after application of zinc sulphate sprays, showed marked development of new fibrous roots; unsprayed trees did not show this tendency to develop new feeding rootlets.

This apparent effect of zinc treatment in stimulating root development is obviously of importance when trees are infested with root nematode.

Trials in Other Districts.

Since the initiation of zinc spraying trials at Bern, similar trials have been carried out at Waikerie, Mypolonga, and Beetaloo Valley. In each of these centres, spray treatments have been applied more recently than at Berri, and it is yet early to expect responses as marked as those noted at the latter centre. However, in every instance, visible improvement in tree health, and some disappearance of mottle-leaf symptoms have already been observed.

At Waikerie, trees affected with mottle-leaf have been subjected to zinc treatment on two properties, and in each instance improvement has occurred. In the Mypolonga area, Washington navel orange trees and lemon trees have been subjected to experiment on neighbouring properties; sprays of zinc sulphate-lime mixture 10:5:100, and of zinc oxide —3 lbs. per 100 galls., were applied in August and again in October to certain sections. Skim milk was used as a spreader and untreated plots were included.

Examination in January, 1937, disclosed improvements in all treated trees, the lemon trees showing a more marked response than the orange trees.

At Beetaloo Valley, an area of orange trees on the property of Mr. J. Halse has been badly affected with mottle-leaf for a considerable period. Investigation in 1935 showed that excessive soil salinity and heavy infestation of the roots with citrus nematode were both associated with the condition of the trees and, in so far as facilities permitted, irrigation technique was amended with a view to correcting the position in regard to soil salinity. Until recently, however, the amendment of irrigation technique of itself had not resulted in appreciable improvement of tree health

In July, 1936, representative plots on this area were sprayed with zinc sulphate-lime mixture 10:5:100 and with zinc oxide—3lbs. per 100 galls. The plots were examined in December, 1936, by District Advisor J. B. Harris, who states that whereas untreated trees have made no apparent improvement in health, all trees which have received zinc sprays are practically free from mottle-leaf and making healthy growth.

Discussion.

The application of zinc sprays to mottle-leaf affected citrus trees in several districts has led to marked improvement in tree health, and the disappearance of mottle-leaf symptoms. The value of zinc

applications under widely varying district conditions has been demonstrated, but the exact manner in which the mineral achieves the response is still somewhat obscure.

Extensive research work in overseas countries is now throwing light on many previously obscure features of mottle-leaf, and microchemical analysis and cytological investigations are both important in the study of fundamentals. In the field, however, there is scope for considerable work in regard to the determination of conditions under which zinc sprays may be expected to be of value, the optimum season for zinc spray treatment, the frequency at which zinc sprays should be applied, and the possibilities of combining zinc compounds with other routine sprays or dusts.

Nevertheless, the results achieved have been so outstanding that it is considered desirable to bring the known facts before growers in this preliminary report.

Recommendations.

At this juncture, it is obviously impossible to issue a general recommendation, but in view of the success achieved in preliminary experiments, it is suggested that growers should conduct on their own behalf, trial sprayings of trees affected with mottle-leaf.

For such trials, a spray composed of 3 lbs. of zinc oxide per 100 galls. of water is recommended; a spreader such as lime-casein or skim milk (3 galls. per 100 galls.) may be employed. The cost of spray material is not high, a suitable grade of zinc oxide being available at from 6d. per lb. Although this spray may be applied with reasonable safety at any time of the year, it is undesirable to carry out extensive spraying within a short period of harvest owing to possible difficulty in removing spray residue.

Generally, better responses have been obtained when zinc sprays have been applied just prior to a growth period, and overseas experience has indicated that the beneficial effects of zinc treatment may be expected to persist for a period of approximately two years.

It is not anticipated that zinc treatment will correct unthriftiness where trees are grossly affected by seepage, excessive salt accumulations, poor cultural treatment, or other adverse environmental conditions, but there is definite promise that many cases of typical mottle-leaf may be successfully treated.

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REPORT ON RED PEA EXPERIMENTAL PLOT AT TEMPLE HALL.

(By A. P. HANSON, *Supervisor of Instructors.*)

. The following is the detailed Report on the growing experimentally of Red Kidney Beans (commonly known as "Red Peas") at Temple Hall, in St. Andrew.

2. (A) From 12½ quarts, Jamaica variety, sometimes called "Cock's Comb," planted and fertilized with 4-10-12 I have reaped 6 bushels, 18 quarts, a yield of 16.569 or over 16½ to 1.

(b) From 12½ quarts of the same Jamaican variety grown without fertilized the return is 3 bushels 22 quarts, a yield of 9.451 or roughly 9½ to 1.

(c) From 3½ quarts imported American seeds planted and fertilized with 4-10-12, I have reaped 1 bushel 2 quarts, a yield of 9.7 or slightly over 9½ to 1.

(d) From 3½ quarts of the same American variety grown without fertilizer I reaped 18½ quarts, a yield roughly of 5½ to 1.

3. Contrary to the opinion sometimes expressed that the seed of the American variety being much larger than that of the native, the yield would be greater, the above figures should be very convincing on this point. The different varieties were both planted at the same time, and grown under identically the same conditions. Furthermore the weather being rather wet, the American variety suffered from the dying of many of the leaves. Here and there the pods developed small black spots capable of penetrating the pods to the seeds. A severe attack of this sort would result in considerable loss. The native variety, in spite of the rains kept free from these symptoms. It may be mentioned that other parts of the West Indies have had similar experience with the imported variety of Red Kidney Beans.

4. (A) Preparation and Planting.

The area planted was one acre. There was no burning. The land was ploughed and thoroughly broken up four weeks ahead, and left to weather, then finally harrowed to keep weeds down. Furrows were laid out 2 feet apart with the plough. As indicated above (A., B., C., D.) half the plot was fertilized with 4—10—12.

(B) The amount applied to half an acre was 180 lbs., roughly 4 lbs of fertilizer to 100 yards of furrow, or 1 lb. to 25 yards of furrow. Soil and fertilizer were lightly mixed, and the peas planted two seeds together at intervals of nine inches in the row. (A labouring woman was shown to drop two seeds at her heel and then two at her toes, and to follow that distance.) At that rate the acre of ground took in exactly 32 quarts.

(C) The seeds of the American variety being very large, an acre planted at the above stated rate worked out at 39 quarts to the acre.

(D) Planting was done last December 10-11. The crop was reaped February 27—March 1-2; roughly 11 weeks. They might have been reaped in 10 weeks but other urgent business prevented.

5. Soil, etc.

Temple Hall, where the experiment was conducted is in the Wag Water Valley in St. Andrew. A "Soiltex" test of the soil registered a medium acid soil condition. The soil was somewhat on the clayey side, but not very much so. Heavy rains fell during the greater part of the period of growth, and handicapped cultivation to the extent that only the unfertilized sections received moulding.

6. Cost of Production.

The Plot being on a Grazing Pen had to be fenced. Some stumping had also to be done.

	£	s.	d.
Clearing and stumping cost	1	6	3
4 Ploughings and Harrowing	3	10	0
180 lbs. Fertilizer	0	18	0
32 quarts seeds at 9d.	1	4	0
Application of Fertilizer	0	5	0
Planting	0	10	0
Moulding	0	8	0
Trenching	0	3	0
Reaping and Threshing	1	4	0
	£9	8	3

7. The Plot is now in very good condition, and can produce some other crop, corn for example, at a cost of about £5 (Five Pounds.)

8. Mass production of "Red Peas" must eliminate planting, threshing and winnowing by hand-primitive methods which had to be tolerated in this case. A Peas-planter, thresher and fanner are necessities. In the case of the average peas grower, most of the work is usually done by himself.

9. (A) Remarks.—A great deal of interest was shown in the plot by agriculturists far and near. I conducted members of adult Branch Societies and of one Juvenile Branch to the spot, and explained the operations.

(B) The Society is indebted to Mr. A. O. Soutar for having placed the land for the experiment at its disposal. Both he and his brother. Mr. Harold Soutar, rendered very valuable services with the laying out, preparation, etc., of the plot. Peas planting has increased rapidly in the area, due to propaganda, and the prospect of the local market being recovered by local agriculturists. Up to the date of writing Red Peas can be got in the Kingston markets at 4d. per quart from growers.

(Sgd.) A. P. HANSON.

COMMENTS ON COSTS.

Clearing, Stumping, etc. should be unnecessary on land continuously farmed. No growth should be beyond the capacity of a plough or heavy cover-crop disc harrow, to be turned in. The cost under this heading should not be recurrent.

Four Ploughings and Harrowings: This is due to the implements available being too small, necessitating repeated operations of the same nature. An expenditure of 10/- per acre should with the appropriate implements be ample.

Fertilizer: A Fertilizer analysing 4.10.12 in large lots can be bought for approximately 7/- per 100 lbs., so the cost on this item need not, in growing the crop on a large scale, exceed for an acre—360 lbs. at 7/ per 100—£1 5s. 2d.

Application, if done with a fertilizer distributing implement, can be done for 2/- per acre.

Planting: Planting, if done with sowing machines, can be done for 2/- per acre.

Moulding: Implement work would reduce this item to 2/- per acre.

Reaping and Threshing: Appropriate machines for threshing would cut the cost incurred on the experiment in half, and the harvesting and threshing item should not exceed 1/- per bushel.

General: With permanently farmed land and appropriate cultural implements and threshing machinery, Red Peas production costs should approximate as follows:

	£	s.	d.
Ploughing and harrowing	0	10	0
Fertilizer—360 lbs. at 7/- %	1	5	2
Fertilizer Application	0	2	0
Planting	0	2	0
Moulding	0	2	0
Trenches	0	5	0
Reaping and Threshing—16 bushels at 1/- ...	0	16	0
Bagging and Bags	0	5	0
	£3	7	2
Unforeseen	0	2	10
	£3	10	0

for a production averaging 16 bushels, equalling 4/4½d. per bushel bagged.

ED.

We reproduce here a talk on "Burning the Land," given by Mr. A. P. Hanson, Supervisor of Instructors at the Meeting of the Clarendon Branches Associated on the 16th of April last, and now that there is a tightening up of the regulations in respect to the clearing of lands for cultivation with fire, it should be read with more than passing interest.

ED.

Mr. President, Ladies and Gentlemen.—Any few thoughts that I am afforded the opportunity of expressing here to-day, I prefer to confine to this burning question of "Burning the Land." It is a matter being discussed all over the Island; so I want to make use of every favourable opportunity such as this to appeal to my fellow agriculturists.

RAINFALL.

The question whether woodlands influence rainfall is sometimes put down as debatable. There are historical records proving, however, that the ruin of the forests has meant the ruin of the nation. Parts of North Africa which are mostly deserts to-day were once prosperous countries, with thriving cities of the Greeks, Romans, and Venitians. History tells us that the Countries of Northern Africa produced grains and fruits in abundance, in fact to such an extent that they were the granaries of the Roman Empire. By the destruction of their forests they burnt up the land, and those countries to-day form part of a great desert where neither man nor beast can find the means of living. Modern history tells also of the destruction of the forests of Palestine, Mesopotamia, Sicily, and parts of China now all but barren deserts, yet once supporting large and prosperous populations. This decay has been logically attributed to the direct and sickening result of ruining the forests.

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Now let us look at an example nearer home. I well remember my first official visit into this parish of Clarendon. It was somewhere beyond this town of Chapelton that I gazed on the far off denuded mountain, and asked Instructor Shirley where it was, only to be told, "The Bull Head Mountain." Well, believe it or not, I felt clammy. I thought things were bad in St. Andrew, looking towards Blue Mountain, but here was Bull Head of which I had read and heard so much, without a wood lot, without a forest tree.

Now, do you know what happened while you had that Mountain covered with forest? You had there a God-given moisture reservoir. The trees received and distributed the rain water which soaked into the soil, and filtered slowly and economically into the springs and rivers. The earth was kept cool by the trees so that the water, instead of being dried up by heat, was given out slowly. Science has proved that 88 per cent. of the rainfall was absorbed by the leaf mould on your forest floor, and that the distribution of it took 27 months normally Now that that forest cover has been destroyed by cutting and burning, 92 per cent. of the rainfall runs off. All that is saved to-day is 8 per cent. of the rainfall. When the forest was there, 88 per cent. was saved. The fertility of the soil now also becomes considerably reduced, because the heavy washing takes away the cream of the earth.

When the productiveness of the land declines, then property value is reduced. Unless something is done to prevent the rapid wearing out of the soil the result must be poverty, and even starvation. It is the burnt land that has no timber tree, no fruit tree, no shade tree, no pimento, no wind-break, or things of that sort.

Maintaining Fertility.

Our greatest Agricultural problem is that of maintaining the fertility of the soil. To-day we hear a great deal about the soil being "worn out." This means that the soil is producing indifferent or unprofitable crops. The soil in its natural condition never gets worn out because Nature keeps it filled with *humus*. I am asking you particularly to leave here to-day with the word H-U-M-U-S written on your brains. To be successful, the planter, the farmer, the agriculturist must keep the word *Humus* in memory and in practice. "What is Humus?" do you ask? Let me give you an illustration of the use of *humus* as it is found in Nature. We turn again to the once Virgin soil of the Bull Head Mountains over there. What made them so fertile? Year after year, period after period, grasses, vines, trees, etc., grew up, bore, died, decayed, and kept the soil supplied with rotted, or rotting vegetable material.

What has happened since the Clarendonian Axe-man arrived on the scene? Cutting and clearing started while the wreaths of smoke told a sickening tale. The first crops were large. The idea that such land should not be burnt seemed an absurdity. Yet time has proven. To-day the crops are not half what they used to be.

What is the cause? Look at the colour of the soil, for example. The rich, black forest mould has all disappeared. No longer is the soil able to hold water like a sponge. Rather, it suffers more from drought than it ever did before. The logical conclusion is that the soils that are now yielding these poor crops need decaying vegetation to renovate them.

How then can we reconcile these self-evident truths with this hungering for burning up even the scanty weeds and bushes that result from "billing down" present day ruinate. It is indisputable that one means

by which to maintain the fertility of the soil is to keep vegetable material rotting on it.

Ladies and Gentlemen, this is as far only as I propose taking this very important subject to-day. If I have succeeded in making you *Humus*-minded, I am satisfied.

BUDDING OF BOMBAY MANGOES.

Commenting on a short report sent me by Instructor Lynch recently re budding of Bombay mangoes: He writes: "You will be interested to know that when I visited Mr. Ellis Sampson's holding at Alligator Pond, I found that 17 Bombay mango buds were successful out of 20 I had put on three months ago. Of the 20, 17 were T buds and 15 of them are now growing, some being over a foot in height."

We are particularly glad to see the proportion of T buds he got to grow, as we have already advocated this type for small, young stocks. As a matter of fact, in the west of the Island we have been forced to use them as our sources of budwood up to now have been exceedingly limited and have to be got from small trees which we could not disfigure by taking off branches large enough to provide patch buds.

We have advised this before, and now do so again, that those persons in areas where Bombay mangoes will grow and *bear*, should set out seeds of the common types and when they grow into good sized seedlings, bud them to Bombays—using the T buds as in the case of citrus. It will easily be seen that by using this method plants will be well away in the time it would take to wait on the stocks to reach the size when patch buds can be used.

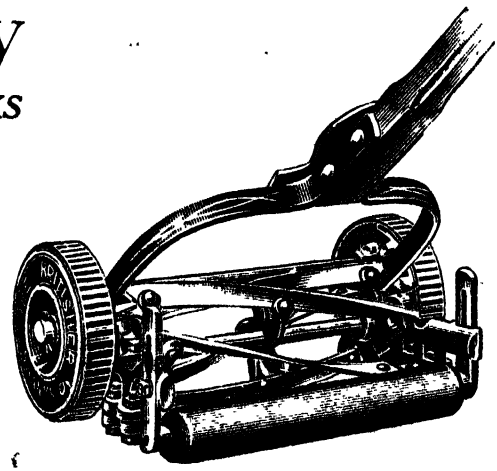
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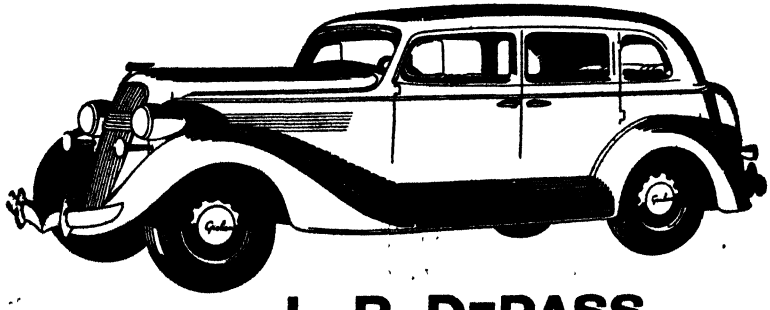
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ANNOUNCEMENTS.

HALF-YEARLY GENERAL MEETING.

The usual Half-Yearly General Meeting will be held on the 4th Thursday, the 22nd of July next, beginning at 10 a.m. at the Collegiate Hall, Kingston.

Besides the ordinary business, there will be the Yearly Election of Vice-Presidents and also election to fill the vacancy on the Board of Management caused by the resignation of Major A. R. Moxsy. It is advisable that Branches Associated, Branches, and Direct Members consider early their business to be placed before this Meeting.

SUBSCRIPTIONS.

Members will please note that the annual subscription to the Jamaica Agricultural Society is now due, 5/- for local members and 10- for foreign.

* * *

TO BRANCH SOCIETIES.

Please note that the Affiliation Fee and List of Members should be sent in early. No Branch will be eligible to take part in the business of the Half-Yearly General Meeting to be held in July unless duly qualified.

* * *

THE REPORT OF THE JAMAICA BANANA COMMISSION, 1936.

We regret to announce that in consequence of more pressing demands on our space, we have been compelled to discontinue publication of the remaining portion of this Report.

To facilitate members who may desire to make complete reference from time to time we have arranged to keep in our Library a few of the originally printed copies which may be had on loan whenever required.

* * *

THE AVICULTURAL SOCIETY OF JAMAICA.

We now have affiliated with us the Avicultural Society of Jamaica, of which Mr. Frank H. Steven, P.O. Box 309, Kingston, is Honorary Secretary.

The Society was formed in October, 1936, and should fill a place in the life of all lovers of Birds in this Country.

The objects of the Society are:—

(a) The study of foreign and native birds.
(b) The conservation of Jamaica Birds at liberty and in captivity.
(c) The keeping and breeding of birds in captivity.
(d) The importation of birds for distribution amongst its members.
(e) Increasing public interest in objects (a), (b) and (c) by exhibiting at Shows for Competition or otherwise by circulating in Jamaica of pamphlets on avicultural matters, or by other means as decided by the Committee from time to time.

We take great pleasure in recommending this Society to all those who are interested in Bird Life.

ED.

AGRICULTURAL CREDIT.

CEYLON BANKING COMMISSION: MR. ORMSBY-GORE AND ITS PROPOSALS.

Colombo, January 22.—The recommendation of the Ceylon Banking Commission, presided over by Sir Sorabji Pochkhanawala for the establishment of a State-aided bank for Ceylon is not approved by Mr. Ormsby-Gore, the Secretary of State for the Colonies. In a dispatch to the Ceylon Government he states that it would be dangerous to agree to its establishment.

He hopes, he adds, that the Ministers will earnestly consider the establishment of an agricultural and industrial credit corporation on the lines indicated by the London committee of experts. Mr. Ormsby-Gore also suggests a reform of the commercial laws of Ceylon and an improvement of the position in connection with land titles.

Gleaner, 2.3.37.

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BRANCH NOTES.

All Reports received are acknowledged in this section of the Journal. This month we have only been able to put in print Notes from Branches who have not yet had a publication this year.

Branch Secretaries should write on one side of the paper only.

[Ed.

CLARENDON: Mt. Airey.—Meeting held 10th April. There were present, all Officers Instructor A. L. Virtue, 40 other members, many visitors, amongst whom were H. G. Dunkley, Esq., J.P., Mr. John Anderson, President of the Richmond Park Branch, and Mr. G. Harris, Agricultural Headman for the district. The preliminaries were carried through, after which the Chairman gave his address, in which, among other things, he emphasized the great work the J.A.S. was doing, and eulogised the untiring efforts and ready and able assistance shown by the Instructor throughout the year. He also spoke of the good work done by the Headman in citrus budding. Delegates were appointed to the Half-Yearly Meeting, Chapelton. The Secretary gave her report, which was adopted. The Treasurer's report, and collection of fees followed. Election of Officers resulted as follows:—Mr. A. J. McLymont, President, re-elected; Mr. C. S. A. Edwards, 1st Vice-President, re-elected; Mr. C. Wilson, 2nd Vice-President; Mr. Rufus Dawkins, Treasurer; Miss M. E. A. Dawkins, Secretary, re-elected. Mr. Dunkley at this stage gave a very stirring address. Another address, given by Mr. J. Anderson, followed. The Instructor, continuing, commended all Officers and spoke encouragingly to Officers and members alike. A resolution re Water Supply was drawn up, to be forwarded to the C.B.A. Mr. Dunkley further spoke on Land Settlement. A very pleasant meeting came to an end with the singing of "The King."

(Miss) M. E. A. DAWKINS,
Richmond Park P.O. Secretary.

Richmond Park.—Annual Meeting held April 22. Present: Messrs. U. Theo. McKay, H. G. Dunkley, J.P., Rev. and Mrs. M. L. Willis, Instructors Virtue (for the district), Shirley, Graham, Mr. Wainwright, President J. A. Anderson, in the Chair, and a crowd of members and visitors. Meeting was called to order by the President who, after welcoming all to the meeting, delivered an encouraging address. The minutes of the previous meeting were read and confirmed, and matters arising were discussed. The Secretary read the Annual Report of the Branch. She was heartily thanked and the report was adopted. The Treasurer's Statement was also read and adopted. A short message from Mr. A. P. Hanson, Supervisor, was read. Mr. H. G. Dunkley, Chairman of the Clarendon Parochial Board, presided over the election which followed. The President, Secretary, and Treasurer were re-elected. Messrs. Denton, Francis, Ovens were elected 1st, 2nd, and 3rd Vice-Presidents, respectively. Miss Watson retained the Assistant Secretaryship. The Executive Committee was appointed. The next item was Mr. U. Theo. McKay's address. He congratulated the Branch on their vigorous Secretary, spoke on the value of the Agricultural Society, and encouraged the members to stick to their Society and their Instructor. After this, the visitors and members enjoyed a sumptuous fare of curried goat. Votes of thanks were tendered by Mr. Dunkley and Rev. Willis. Speeches from Mr. Dunkley and Mr. Shirley were now delivered. Mr. Dunkley's note was optimism and an appeal for co-operation and the application of the principles of Christianity to agricultural affairs. He congratulated the Branch on its progress and made special reference to the success of the Yellow Yam Competition, the winner of which was Mr. Howe—his heaviest hill of yam weighing 163 lbs. Social items and votes of thanks by Messrs. Virtue and Murray were given. The National Anthem concluded the meeting.

(Miss) L. V. ROBINSON,
Richmond Park. Secretary.

John's Hall.—Meeting held March 19. Present: Mr. James Francis, President; Mr. J. A. Graham, Agricultural Instructor, Mr. Lipton Swapp, M.P.B., 14 members and the Secretary. Prayer was offered by the Chairman, who also expressed words of welcome to the Instructor and Mr. Swapp. The Minutes were read and confirmed. Matters arising therefrom were dealt with. Correspondence was read. The Branch expressed regret at the departure of the esteemed Secretary, Mr. Glaister Baxter. A subscription was sent towards the Fund. Delegates were elected to attend the Annual Meeting of the C.B.A., to be held in Chapelton on the 16th April. The Instructor gave a very inspiring address, in which he pointed out the use and need of Fertilizers. Mr. Swapp gave an address on Agriculture. Authorized Persons submitted their reports. The meeting rose at the singing of the National Anthem.

(Mrs.) IRIS LATTY,
Frankfield P.O. Secretary.

MANCHESTER : Fairfield.—Meeting held 22nd April. Present were : Rt. Rev. A. Westphal, in the Chair, 8 other members, and the Instructor. Eight new members were enrolled. The Treasurer reported a balance of £4 2s. 6d. The following letters were read and discussed : (1) Circular re Handcuffs and Badges for Authorized Persons. (2) Country Fires Law of 1902. (3) Letter from T. Geddes Grant, Esq. (4) Letter from the Swiss Stores. (5) Circular re New List of Members, 1937-1938. Election of Officers took place. All the Officers were re-elected. The Chairman referred to an article which deals with alcoholic drinks, in the January Journal. The Instructor thanked Officers and members for their co-operation during the past year. He spoke on "Cocoa Crops," and distributed a handful of Bengal Beans to each member. He also dealt with "Poultry Rearing." He was thanked by the Chairman, who also thanked Headman Wright for the valuable services he rendered in the district recently. The meeting adjourned with the Benediction.

H. H. WILLIAMS,
Lincoln P.O. Secretary.

Mizpah.—Meeting held April 12. Present were : Rev. J. W. Kneale (President), Rev. J. H. Allen, Instructor Graham, many visitors and the Secretary, Mr. U. C. Wolfe. The President offered prayer and extended a welcome to all. This was followed by the reading and confirmation of the Minutes. The correspondence followed. A letter from Mr. M. H. Williams was read stating that Walderston was now a Polling Station for Parochial Elections. The Secretary's report was a fine summary of the year's activities. He was heartily thanked. The Treasurer's Report showed a small balance. Fees were taken and Officers elected. The results were as follows : President, Rev. J. W. Kneale, re-elected; 1st Vice-President, Teacher Roberts; 2nd Vice-President, Mr. J. T. Cousins; 3rd Vice-President, Mr. J. S. McKenzie, Secretary, Mr. U. C. Wolfe, re-elected; Assistant Secretary, Teacher Roberts; Treasurer, Miss J. E. Whyte, re-elected. Executive Committee : Officers of the Branch, together with Miss L. Wilson, and Messrs. H. Fraser and J. Collins. The President introduced the Rev. Mr. Allen, of Davyton. He knew his interest in Agriculture, he said, hence the invitation to him to address that meeting. Rev. Mr. Allen addressed the meeting. He referred to Irish Potato culture. He finished up by saying, Nature was honest. Give and you get, withhold, and she shows you what might have been. Refreshments were served at this stage. Instructor Graham spoke on 'Intensive Cultivation,' the topic of the evening. He explained the Indore method, and the advantages over the ordinary method. The Instructor next spoke, on the use of Fertilizers. The harm done by the careless use of fire on the land was pointed out. Those interested in the formation of a Vegetable Association, gave in their names. Votes of thanks were accorded the Refreshment Committee and the Instructor. The latter was assured that his work was appreciated. After the National Anthem, the meeting adjourned.

U. C. WOLFE,
Walderston P.O. Secretary.

Old England.—Annual Meeting held 27th April. Present : Mr. H. L. Blackwood, 1st Vice-President presiding, who opened the meeting with prayer, six other members, the Instructor, Mr. H. A. Darby and the Secretary. The Chairman welcomed the members, expressed much pleasure to see the Instructor with us, and referred to the illness of the President, Mr. J. T. Gordon with much regret. The Minutes of the December meeting were read and confirmed. As matters arising out of the Minutes, some questions in connection with a case of arrest by the A.P. were asked. The Instructor who was in the district for nearly all the day, gave his address. He spoke much on the preserving of moisture, and encouraged mulching. Communication : Letter from the Secretary of the Parent Society re Proclamation of the Governor in the Gazette in connection with the Country Fires Law, was read and dealt with; also letter from Messrs. T. Geddes Grant, Ltd., introducing Fertilizers to the members. The Instructor explained the various classes of Fertilizers, and how and when they should be used. A vote of thanks was accorded him. The Secretary's Report was read and adopted. The Treasurer's Balance Sheet was next presented. This was also accepted. Election of Officers : Mr. H. L. Blackwood, unanimously elected President; Messrs. H. J. Pinnock, Gerald True and Gladstone Williams, elected 1st, 2nd and 3rd V.-P.'s, respectively, Mr. C. P. Watson, re-elected Treasurer and Secretary. One new member enrolled. The singing of the National Anthem brought the meeting to a close.

C. P. WATSON,
Old England. Secretary.

Snowdon.—Annual Meeting held 13.4.37. Present : H. E. Lewis, Esq., and 19 other members. There was some discussion re the refusal of the Clerk of the Courts for the parish to sanction payment of an A.P. The Secretary was authorised to communicate with the Secretary of the Parent Society with a view of that Officer bringing

the matter to the attention of the Inspector General for his ruling. The formation of a Co-Operative Bank in connection with the Branch was rigorously discussed, and a special meeting was announced for further discussion. The "piling up of citrus fruits" by dealers in the boxes which are used for purchasing fruits, was spoken on, and the meeting felt that some say by the proper authorities on the matter would be useful. The Secretary's Report reviewed the Branch's activities for the year. Election resulted as follows: President, H. E. Lewis, Esq., J.P., re-elected; 1st V.-P., H. H. Kohler, Esq., re-elected; 2nd V.-P., Mr. S. J. Alexander; 3rd V.P., Mr. R. F. Smith. Minor matters were dealt with and the National Anthem closed the meeting.

S. J. ALEXANDER,
Newport P.O. Reporting Secretary.

PORTLAND: Bybrook.—Annual Meeting held 8th April. Present: Mr. W. Harper Watson, Member of the Board of Management; Instructor A. T. Wilmot, 12 members, 30 Juveniles, and a large turn-out of visitors. The President extended a warm welcome to the house. The minutes were read and confirmed, and matters arising therefrom were discussed. Re a Ticket Distributor for the district: Mr. Harper Watson advised that this matter should be dealt with by the Parochial Board. A.P. reported 1 case of larceny and 1 attempt. A.P. Richards reported "All Correct." Mr. Watson gave an address, speaking at length on the rearing of pigs. He was thanked. The Instructor gave his address. The Guides rendered two beautiful glees, a solo by Miss A. West, recitations by Masters S. Dunbar, M. Davis and Miss J. Maulsby, for which they received the applause of the house. Election of Officers resulted thus: Mr. S. E. Patterson, re-elected President; Messrs. R. M. Burgess, A. Laidley, 1st and 2nd V.-P., Mr. E. Davis, Treasurer, Miss J. Watson, Secretary, and Miss I. Facey, Assistant Secretary. After minor matters were dealt with and the usual votes of thanks accorded, the National Anthem terminated the meeting.

(Miss) J. V. WATSON,
Skibo P.O. Assistant Secretary.

Maidstone-Bourbon Branch.—Annual Meeting held March 24. Present: Mr. N. V. Thompson, B.A., M.P.B., in the chair; Instructor G. R. Graham, the Secretary, 16 other members, 2 visitors and 8 Juveniles. After confirmation of the Minutes the President reported that the Parochial Board had promised to have Darley retained as a vaccination centre. The Instructor advised that Cabbage Competition be postponed, owing to present warmth. The meeting agreed that the boar owned by the Branch be handed over to a reliable person to be castrated and fattened on half profit. Letters were read from: (a) Mr. T. J. Cawley re the Baxter's Presentation Fund; (b) Secretary J.A.S. re Country Fires Law; (c) Miss E. Brown re citrus plants paid for during 1935. Secretary explained the position. The Secretary's and Treasurer's Reports were read and adopted. Secretary's resignation received with much regret. Election of Officers resulted as follows: President: Mr. N. V. Thompson, B.A., M.P.B., re-elected; 1st V.-P., Mr. Wm. Casey, re-elected; 2nd V.-P., Mr. L. L. Williams, 3rd V.-P., Mr. Benjamin Somers, Secretary, Mr. I. E. Somers, Asst. Secretary, Mr. Z. Brown, Treasurer, Mr. John E. Thompson. Five other members were added to the above-named Officers to form a Managing Committee. On the suggestion of the President, it was unanimously agreed that a purse be presented to the departing Secretary of the Branch. The Instructor gave an address on the wanton use of fire and the consequent loss to planters. A hearty vote of thanks was conveyed by the President to Mr. Graham. The meeting, a very enjoyable one, was brought to a close by the singing of the National Anthem.

I. E. SOMERS,
St. Margaret's Bay P.O. Secretary.

Nonsuch.—Annual Meeting held 22.4.37. There were present: Mr. Prince Wright, who was re-elected President; Messrs. Ingram Hamilton and T. William Hughes, who were re-elected 1st and 2nd Vice-Presidents, respectively; Mr. Thomas Lewis, who was elected 3rd V.-P.; Instructor Graham, Mr. Arthur H. W. Williams, who was re-elected Secretary and Treasurer, and many more members and visitors. Fully 70 Juveniles were present, all members of the Nonsuch Juvenile Branch. They rendered Glees and Recitations which were highly appreciated by the Adults. After the opening of the meeting with prayer, the President made a welcome address in which he reviewed the achievements of the Branch for the past year, and encouraged the members to continue giving the Branch their wholehearted support. After the reading and confirmation of the Minutes a lengthy discussion followed on the "Country Fires Law." Instructor Graham, in a most fluent and impressive manner, told of the uses of the Law. He showed the harm done to the soil by burning the land, and told how the most difficult land could be cleared without the use of fire. Authorised Persons present reported "All Correct." The Report of the Secretary was brief but

interesting and encouraging. After the discussion of minor matters, the Roll Call was taken, then the meeting terminated with the singing of the National Anthem.

ARTHUR H. W. WILLIAMS,
Port Antonio P.O. Secretary.

ST. ANDREW : Paisley.—Annual Meeting held 15.4.37. Present : 20 members, 10 visitors, with the 1st V.-P. in the Chair. After the minutes of the previous meeting were read and confirmed, the Secretary presented his Annual Report. The matter re Reply from Parochial Board of St. Mary to Petition for roadway, provoked much discussion. The necessity of having a Doctor to visit the district was also discussed. Election of Officers resulted as follows : Rev. E. E. McLaughlin, Councillor, K.S.A.C., President; Mr. W. J. Hawthorne, 1st V.-P., Mr. Josiah Morrison, 2nd V.P., Mr. Ivanhoe Montgomery, 3rd V.-P., Mr. N. Hawthorne, re-elected Secretary, Mrs. Henrietta Henry, Treasurer. Other minor matters were dealt with and the meeting closed with the singing of the National Anthem.

N. HAWTHORNE,
Glengoffe P.O. Secretary.

Lower St. Andrew.—Annual Meeting held 13th April. There was a large attendance of members. The meeting was addressed by Mr. Bacquie, Acting Secretary, and Mr. MacDonald, Accountant, of the Parent Society. The Annual Report of the Society is as follows :—This Society was affiliated to the Jamaica Agricultural Society last April, with a paid up membership of 33. The ratio of attendance to actual membership was high, and no meeting fell through for want of a quorum, even on rainy nights. This Society joined the Associated Branches of St. Andrew and had the pleasure of seeing the delegates immediately absorbed into the Executive Committee. The 1st V.-P. of the Branch was appointed Secretary of the Association. The Branch is fortunate in having members who can give instruction whenever the Instructor is absent. Lectures were given during the year by the President, Mr. East, Mr. Taylor, and Mr. Dowden. The community (agricultural and otherwise) suffered a distinct loss in the departure of Mr. Glaister Baxter, Secretary of the Parent Society. This Branch joined to its fullest in his valediction. The Society was instrumental in getting a large number of mango trees budded to Bombay by the staff of the Agricultural Department, as well as that of the Agricultural Society. This was done for non-members of this Society as well as members. The membership of the Society on 31.3.37 was 40.

(Mrs.) A. DOWDEN,
Halfway Tree P.O. Secretary.

ST. CATHERINE : Springvale.—Annual Meeting held 26.4.37. Present : the Officers, the Instructor, and 30 members. The Secretary read his Report relative to the activities of the Branch during the year under review. The Report dealt with the following points : Membership, Instructor's visit, Attendance at Branch Meetings, Delegates to the St. Catherine Branches Associated, the Half-Yearly General Meeting in Kingston, Agricultural Headman, A.P.'s, Special Committee, Finance, and the Future outlook of the Branch. The Secretary was thanked for this interesting report. The Treasurer's Report showed a balance to the credit of the Branch. After Roll Call and Collection of Dues, the Election of Officers followed, which resulted in the re-election of the old Officers to serve for the current year. The Instructor addressed the meeting on Live Stock, the Prospects of the New Year, Vegetable Industry, and Cocoa Cultivation. The Instructor was thanked and the meeting terminated with the National Anthem.

D. V. SHAKESPEARE,
Bog Walk P.O. Secretary.

ST. ELIZABETH : Malvern.—Annual Meeting held March 25. Present were : Mr. A. E. Fraser, 1st V.-P., who occupied the Chair, Mr. H. W. Lynch, Instructor, 13 members, 3 visitors and the senior scholars of the Bethlehem Practising School Condolence was expressed re the death of the late Hon. A. E. Harrison, Custos of the parish. A very interesting Paper on "The Duty of the Community to the Agricultural Branch" was read by Mr. A. N. Finlayson, for which he was heartily thanked. Two songs were rendered by the scholars of the Bethlehem Practising School. The meeting decided to hold a Corn Competition in July. The Secretary's Annual Report and the Treasurer's Financial Statement were read and adopted. The Election of Officers resulted as follows : Rev. S. C. Ashton, President, Messrs A. E. Fraser and T. M. Fagan, 1st and 2nd Vice-Presidents, respectively, Miss E. I. Blake, Secretary, and Miss M. L. Benjamin, Assistant Secretary, all re-elected. A Managing Committee

was also elected. It was announced that the next Half-Yearly Meeting of the S.E.B.A. will be held at Bethlehem. The meeting terminated with the singing of the Doxology.

(Miss) E. I. BLAKE,
Malvern P.O. Secretary.

Pedro Plains.—Annual Meeting held 16.4.37. Among those present were: Mr. and Mrs. H. W. Lynch, the Misses Lynch, Messrs. K. D. Carnegie, M.A. (London), B. A. Henry, 1st Vice-President, J. S. Millard, Secretary and Treasurer. After prayer by Instructor Lynch, and opening remarks by the Chairman, the minutes were read and confirmed. Matters arising were discussed, namely, Tomato Growing Competition and Berkshire Boar, purchased by the Branch. The Annual Report was then presented and adopted. The Treasurer's Report was also presented. The Instructor addressed the meeting and handed out the prizes for the Peanut Competition. Mr. Carnegie entertained the meeting with an address, and both speakers were thanked. Correspondence dealing with the Vegetable Competition to be held in January, was read. There was discussion on the Country Fires Law, and the meeting terminated with the singing of the National Anthem.

I. S. MILLARD,
Pedro Plains P.O. Secretary.

Springfield.—Meeting held 10.4.37. Mr. Charles Scarlett, 1st V.-P. occupied the Chair. 13 members were present. After the reading and confirmation of the Minutes matters arising therefrom were dealt with. Re the Country Fires Law, it was generally considered impracticable to carry out this in all details. Hope is entertained that something will be done to modify it. At this stage the Secretary presented the Annual Report for the year ended 31st March, 1937. The Report was adopted and a vote of thanks was accorded the Secretary. The election of Officers for the ensuing year resulted as follows: Mr. Charles Scarlett, elected President; Mr. Lyford Black, 1st V.-P., Miss R. E. Witter, Treasurer, Mr. U. K. Walters, elected Secretary, and Miss F. A. Scarlett, Asst. Secretary. Re the product of the plot connected with the Branch, Mr. Brumley paid in 2/6d., obtained from sale of Tomatoes; Mr. Scarlett, 3¾d. from sale of Cabbages; and Mr. Clark informed the meeting that he will report on Tobacco after the full crop had been taken in. The A.P. reported "All Correct," and after Roll Call, the meeting terminated with the National Anthem

U. K. WALTERS,
Springfield P.O. Secretary.

ST. JAMES: Mt. Horeb.—Annual Meeting held April 24. Present were: Mr. J. G. Johnson, 1st V.-P., in the Chair; the Secretary, Instructor W. D. Marr, and 10 others. The meeting was called to order by the 1st V.-P. who opened with prayer. He then welcomed those present and expressed the hope that the members would still carry on in the usual spirit of co-operation. Apologies for absence were tendered. The Minutes of the previous meeting were read and confirmed. The Secretary was instructed to write: (a) to the Hon. A. B. Lowe, in appreciation of his efforts towards Jericho Road; (b) to the Parochial Board of St. James, asking for the services of a District Nurse. The Secretary's Report was read and adopted. The Election of Officers resulted thus: President, Rev. J. J. Thomas, 1st V.-P., Mr. J. G. Johnson, 2nd V.-P., Mr. H. A. Ramsay, 3rd V.-P., Mr. S. Allen, Secretary, Mr. S. A. Scott, Treasurer, Mr. W. Maitland, Auditors, Messrs. M. Carey and H. Brown. After the report of the Authorised Persons, the Instructor gave a very interesting address. Membership fees were paid in, and the meeting closed with the singing of the National Anthem.

S. A. SCOTT,
Mt. Horeb P.O. Secretary.

ST. MARY: Baxter's Mtn.—Meeting 20th April. In the absence of the President, who was ill, the Asst. Secretary opened the meeting in the usual way, and took the Chair. The minutes of the last Annual Meeting were read and confirmed. Correspondence was read. Arising from the correspondence, the No. 31 Road came in for discussion, and it was decided to write the Board re their last promise, also to ask the Hon. Member of the Parish to support the request. Election of Officers was now continued as from last meeting. The Treasurer assented to his re-election. A Committee was formed. There were three new members. Authorised Persons gave their reports for the year. Messrs. Coke and N. Pettigrew addressed the meeting on the usefulness of the Society, and encouraged the planting of Pines, Tobacco and Irish Potatoes. They requested the co-operation of members. The Roll Call showed 10 members and the Secretary present. The National Anthem closed the meeting.

R. J. LAWSON RICKETTS,
Annotto Bay. Secretary.

Castleton.—Annual Meeting held 6th April. The Instructor who had spent the forenoon and early afternoon at members' holdings, was unavoidably absent. The Minutes of the last Annual Meeting were read and confirmed. A circular dealing with the re-affiliation of the Branch, was read and dealt with. One A.P. was present. The Secretary's Reports were read and adopted. The President expressed pleasure at the report. The members renewed their membership. Officers were elected to serve the Branch for the ensuing year, as follows :—President, Mr. C. E. Braham, re-elected; 1st V.-P., Mrs. P. Pickersgill; 2nd V.-P., Mr. C. T. Phillips; Secretary, Miss L .M. Simpson, re-elected; Treasurer, Mrs. J. Scott. Members of the Standing Committee : Messrs. C. Bennett, M. Phillips, G. Grey. After this important business, all agreed that the meetings should be held on Mondays instead of Tuesdays. The Roll Call was then taken, and a very interesting meeting was brought to a close. Those present were : Mr. C. E. Graham, President: Mrs. P. Pickersgill, 1st V.-P.; Mr. C. T. Phillip, 2nd V.-P.; Mrs. J. Scott, Treasurer, 3 members and Miss L. M. Simpson, Secretary.

(Miss) L. M. SIMPSON,
Castleton P.O. Secretary.

Epsom.—Annual Meeting held 7th April. Present : Messrs. D. A. Jones, Instructor, and Mr. W. G. Sampson, President, and quite a number of members and visitors. Five of the visitors became members. A programme was rendered by the school children, and a hearty vote of thanks given to the teacher, Miss Z. P. James. The Secretary gave a full report of work done for the year. Much thanks was accorded him. The Reports of the Treasurer and Secretary were presented. Election resulted as follows :—W. G. Sampson, 1st V.-P C. H. Grossett, 2nd V.-P., W. W. Hinds, 3rd V.-P., E. D. Allen, Treasurer, Fred A. Edwards, Secretary, Miss Z. P. James, Assistant Secretary. Helpful addresses were given by the Instructor, and Miss James. An enjoyable and interesting meeting then adjourned with the singing of the National Anthem.

FRED. A. EDWARDS,
Annotto Bay P.O. Secretary.

Free Hill.—Annual Meeting held on Thursday, 22nd April. Among those present were : Messrs. E. Z. Rose, President; J. W Brown, 1st V.-P., N. B. Falconer, Secretary, and 7 members. The President opened the meeting with Prayer; Correspondence was dealt with; A.P. made two reports of work done. Discussion on the use of Fertilizers for Bananas. The Secretary presented his Report, and a discussion arose as to how to make the meetings more interesting. The Election of Officers was deferred to a special meeting to be held on 29.4 37 Four members paid in subs. A Special Meeting was held 29.4.37. There were several visitors present, some of whom were enrolled as members of the Branch. The following Officers were elected : President, Mr. J. W. Brown; 1st V.-P., Mr. H. M. Silvera, Snr., 2nd V.-P., Mr. D. I. DaCosta; Secretary, Mr. N. B. Falconer, Asst Secretary, Mr. E. M. Anderson; Treasurer, Miss Z. Wilmot. A Managing Committee, consisting of the Officers and Messrs. R. E Anderson, A. S. Brown and E. Z. Rose, was appointed. Mr. Walters delivered a very interesting and instructive address on "Advanced Agriculture." The necessity for encouraging crops other than bananas, was specially emphasized. The National Anthem.

N. B. FALCONER.
Free Hill P.O. Secretary.

Lucky Hill-Jeffrey Town Branch.—Meeting held 20.4.37. Present : I. H. Jefferson, Esq., in the Chair, 8 members, 3 visitors. The Instructor, Mr. L. A. M. B Coke, and the Secretary. The President called the meeting to order and welcomed the visitors, one of whom was Mr. C. L. A. Stuart, Secretary of the Wood Park Branch, and President of the St Mary Associated Branches. The minutes of the last meeting were read and confirmed and business arising therefrom discussed. This being the Annual Meeting, Mr. Robt. Jefferson moved the suspension of the Standing Orders and moved, that owing to the small attendance, the Annual Meeting be deferred till the next meeting at Jeffrey Town. This was agreed to. Correspondence was read. The Instructor who visited many holdings for the day, spoke on Fertilizers, and Analysis of the Soils. The President moved that the Officers of the Associated Branches be honorary members of this Branch. Meeting agreed. The meeting agreed to subscribe to the Coronation Funds. Three Authorized Persons present reported on their work. Fees were collected and the meeting came to a close with the singing of the National Anthem.

F. WRIGHT GEOHAGHAN,
Lucky Hill P.O. Secretary.

Mt. Regale.—Annual Meeting held April 2. Present : The Instructor, Mr. D. A. Jones, Teacher Turnbull, of the Eliott School, and many other members. The Chair was occupied by Mr. P. G. Edwards, 1st V.-P. The Secretary's and Treasurer's Reports were submitted and adopted. The President extended a vote of thanks to Mr. Turnbull, who gave a splendid address, based on "Intelligent Industry." The Officers who worked for the year under review were thanked for their services, after the President had given a brief report on the year's work. The Election of Officers resulted as follows :—Mr. G. A. Hylton, President, Mr. P. G. Edwards, 1st V.-P., Mr. F. E. White, 2nd V.-P. Mr. A. Spalding, 3rd V.-P., Mrs. A. A. Hylton, Treasurer, Mr. T. H. Hannam, Secretary, Mr. A. Spalding, Assistant Secretary. Several matters were discussed. The singing of the National Anthem closed the meeting.

T. H. HANNAM,
Mt. Regale P.O. Secretary.

ST. THOMAS : Hagley Gap.—Annual Meeting held 23rd April. Present : Mr. J. N. Gordon, President, Mr. U. A. McLaren, Agricultural Instructor, and a large number of members. The minutes of the previous Annual Meeting were read and confirmed. A lengthy discussion re the Country Fires Law, took place. Members showed the great difficulty that would be experienced if the Law were to be carried out in its entirety. The Agricultural Instructor showed the benefits that would accrue if bushes were allowed to rot instead of being burnt, and his explanation satisfied the majority of the members. The Acting Secretary, Miss Singleton, presented her Annual Report, which was adopted. The President gave his retiring address, and the election of officers took place as follows :—President Mr. J. U. Gordon (re-elected), 1st V.-P., Mr. N B. Clarke, 2nd V.-P., Mr. H. Gilroy, 3rd V.P., Mr. Astley Henderson, Secretary, Mr. J. M. N. Grant, Asst. Secretary and Treasurer, Miss B. E. Singleton. A Managing Committee was also elected. After minor matters were dealt with the meeting stood adjourned.

J. M. N. GRANT,
Hagley Gap P.O. Secretary.

WESTMORELAND : Caledonia.—Meeting held March 23. Present : Mr. N. A Grey, President, Instructor F. W. Keily, and 12 members. Prayer was offered by the 2nd V.-P., Mr. E. C. H. Reid. Matters arising out of the minutes were dealt with. Final arrangements were made for the visit to Grove Place. The Instructor addressed the gathering. He pointed out the possibility of the Pine-Apple Industry being developed, and asked the members present to read and discuss the Journals at the meetings. The Roll Call and singing of the National Anthem brought the meeting to a close.

(Miss) I. VIC. MCPHERSON,
Darliston P.O. Secretary.

Mt. Airey.—Meeting held 16th April. Present were : Mr. M. H. Segre, President, 11 members and 19 visitors. The President in his opening remarks said he regretted his unavoidable absence from the meetings in previous months. The minutes of the last meeting were read and confirmed. Correspondence was next dealt with. A letter from the Parent Society re the membership for ensuing year, was read, also one from the Clerk, Parochial Board, acknowledging the receipt of a resolution sent from this Branch. As matters arising out of the minutes, the question of the Iron Shore Road was again brought up, and the Secretary was advised to write a letter to the Parochial Board acknowledging letter sent, and to point out that nothing has been done to the roads in question. This being the Annual Meeting, the election of officers next took place, which resulted thus : Messrs. M. H. Segre, re-elected President; C. H. Lynch, 1st V.-P., A. McKenzie, 2nd V.-P., re-elected; A. Russell, 3rd V.-P., Misses I. Froome, Treasurer, J. A. Muir, Secretary, and Mr. R. Parkinson, Asst. Secretary. The President then gave his closing remarks. In it he stressed the need of visitors increasing the membership of the Branch. The National Anthem then brought the meeting to a close.

(Miss) C. L. LYNCH,
Negril P.O. Secretary.

Porter's Mtn.—Meeting 19.4.37. This was the second Annual Meeting of the Branch. Present were : Messrs. D. N. Clarke, President, 8 members, 10 visitors, a few Juveniles, the Instructor, Mr. C. C. Hastings, and the Secretary, Mr. D. F. Brown. The meeting was opened with prayer by the President. The reading and confirmation of the minutes followed this, after which the Secretary was called upon to give his Annual Report. The Report was adopted and discussed. A hearty vote of thanks was conveyed to the Secretary. The Treasurer's Report was read and adopted. The election of officers resulted as follows : President, Mr. D. N. Clarke,

re-elected; 1st V.-P., Mr. Chas. Parkins, 2nd V.-P., Mr. Chas. Chambers, 3rd V.-P., Mr. Leonard Watson, Secretary and Treasurer, Mr. D. F. Bowen, re-elected; Asst. Secretary, Miss L. I. Muir, re-elected. The Instructor then gave a fine address on the danger of setting fire to lands. A hearty vote of thanks was given him. The Secretary was instructed to write the Inspector of Police for Hanover, making enquiries about badges and handcuffs for two A.P.s All the visitors present were enrolled as members for the new year, and after the paying of fees, the meeting was brought to a close by the singing of the National Anthem.

D. F. BOWEN,
Secretary.

Ramble P.O.

OTHER REPORTS RECEIVED.

Branch and Secretary	Date of Meeting.	Attendance.	Business.
Clarendon-			
Prospect (G. D. Dawkins)	5.4.37	22	Correspondence. Election of Officers. Report of A. Ps.. Retiring President's address.
Pleasant Valley (Mrs. A. A. Flyter)	20.4.37		Correspondence. Country Fires Law. Annual Report. Election of Officers. Report of delegate to C.B.A.
Rock (H. D. Thomas)	21.4.37	Over 23	Reports of Treasurer and delegate to C.B.A. Election of Officers. Address by Instructor Virtue.
Manchester			
Bellefield (Miss M. J. Morgan)	2 4.37	16	Election of Officers. Report of Secretary. Vegetable Growers' Society.
St. Ann –			
Watt Town (U. J. Mills)	1.4.37	26	Correspondence. Annual Report. Election of Officers. Address by Instructor Robotham.
St. Elizabeth -			
Brighton (L. C. M. Wallace)	9.4.37	11	Address by Instructor Wray. Juvenile Branch. Proposed outing to Lacovia.
St. James –			
Adelphi (A. B. McKenzie)	13.4 37	8	Report of Secretary and Treasurer. Correspondence. Election of Officers.
St. Mary—			
Flint River (Miss M. E. Dawkins)	8.4.37	12	Routine matters. Election of Officers. Juvenile Meetings.
Richmond (S. A. Officer)	23.4.37	35	Lecture to A. Ps. by Sergeant Chambers. Election of Officers. Reports of Secretary and Treasurer. Address by Hon. Vernon.
St. Thomas			
Dalvey (J. A. MacPherson)	15.4.37	12	Election of Officers. Proposed visit to Grove Place. Report of A. P.
Hagley Gap (J. M. N. Grant)	27.3.37	.	Seed Potatoes. Membership Buttons. Water Supply.
Pear Tree River (V. R. McLean)	1.3.37	25	Homestead Improvement Competition. Correspondence. Country Fires Law. Address by Instructor McLaren.
Do.	5.4.37	"	Water Supply. Road.

OTHER REPORTS RECEIVED, (*contd.*)

Branch and Secretary.	Date of Meeting.	Attendance.	Business.
Trelawny			
Spring Garden-Rock Spring (Miss L. M. Edwards)	8.4.37	..	Reports of Secretary and Treasurer. Election of Officers. Report of A. P. Minor matters.
Ulster Spring (Miss I. C. Williams)	12.4.37	..	Address read and presented to Hon. and Rev. J. Maxwell. Election of Officers. Routine matters.
Waldensia (C. C. Lee)	5 4 37	232	Addresses by Instructor Robotham and Hon. J. W. Maxwell. Election of officers. Country Fires Law.

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THE JOURNAL

OF THE

Jamaica Agricultural Society.

The more people do the more they can do; he who does nothing renders himself incapable of doing anything; while we are executing one work we are preparing ourselves for undertaking another.

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BOARD OF MANAGEMENT.

The regular monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the offices of the Society, 10-12 North Parade, Kingston, on Wednesday, the 5th May, 1937, at 11.30 a.m. There were present: Hon. Geo. Seymour Seymour, O.B.E., in the Chair; Mr. U. Theo. McKay, Third Vice-President; Hon. A. C. Barnes, C.M.G., Director of Agriculture; Messrs. R. A. Burke, T. P. V. McDaniel, D. D. Phillips, and D. Theo. Wint; A. P. Hanson, Supervisor of Instructors, and the Acting Secretary, P. St. L. Bacquie.

Apologies for Absence.

Apology for absence was submitted from Mr. C. O. Cover.

Confirmation of Minutes of the Previous Meeting.—

Copies of the minutes having been sent to members of the Board, they were taken as read, and on the motion of Mr. McDaniel, seconded by Mr. McKay, they were confirmed.

Matters arising out of previous Minutes.—

(a) *Statement by Secretary*: The Secretary read the following:

4th May, 1937.

Gentlemen:

At the last meeting of the Board of Management I was directed to arrange that the neighbouring Instructors should take over the Branches which Supervisor Hanson still worked as Instructor, and to this end I beg to suggest that Instructor Henderson take over Stony Hill, Mannings Hill, St. Christopher's, Lawrence Tavern and Mt. James, and Instructor James take over Unity, Paisley, Toms River and Brandon Hill.

2. With reference to the bull "Sassoon," now at Southfield with Mr. R. D. Binns, and the request for his transfer to another district, I have written to Mr. Binns asking for a statement as regards service, etc., but at this date I have had no reply.

3. With reference to the letter from Messrs. I. C. Maynier & Co., dealing with reference to Government Contracts being awarded to members of the Chinese race, I have asked the firm concerned for data, as directed by the Board, but I have had no reply.

4. Supervisor Hanson, Bee Instructor Heron and myself were asked to find a location for the apiary as the former site selected was not satisfactory. We have seen a spot at the junction of the Spanish Town and Hagley Park Roads which would be ideal, also from a point of view of advertisement. These lands, I understand, belong to the Corporation, and no doubt we can get them from them. We have not

had time since seeing the plot to find out from the Corporation Officers if we can get it. I am, therefore, asking the Board's permission to go into the matter and report at the next meeting.

I hold a letter from Mrs. A. D. C. Levy, stating that as her neighbours were out to make trouble with regard to the former site, she would no longer hold the Society responsible for the rental.

5. All other correspondence and directions consequent on the deliberations of the Board at the last meeting have been carried through.

(Sgd.) P. St. L. Bacquie,
Acting Secretary.

The Secretary said he had since received the data relative prices paid for food stuffs by contractors to Government Institutions.

As arising out of the correspondence with one of them Mr. Phillips introduced the subject of the weights by which ground produce was bought by the dealers. He thought that the cwt. should be 112 lbs. —no less and no more. He thought that the Government should use as large a quantity of native grown stuff as they could and so encourage the cultivators, and this was especially necessary now that there was such a large number of Jamaicans returning from Cuba and other places. The Chairman said it would be difficult to interfere with the arrangements that were made between buyer and seller. He thought that buying in the open market might overcome that difficulty.

Mr. Phillips, however, insisted that they could use the correct weight and name a minimum price for each crop. He also mentioned that the lack of proper storage accommodation in a large extent accounted for the low price that was offered the grower as the firms had to pay a low price to make up for the loss by rot.

Mr. McKay said he was in sympathy with the attitude adopted by Mr. Phillips. Our people were always being urged to cultivate but no assistance was given them to dispose of their produce. He did not think that the Government should give contracts to aliens because there was a definite feeling against aliens coming into this country and supplanting the natives. What the Government was doing in the way of land settlement and continual cry of "back to the land" did not seem to him in keeping with their method of giving out contracts to aliens, and that was the chief thing that the Board wanted to see remedied. Contracts should be given to natives of the island who were engaged to a great extent in agriculture and not to aliens who did not themselves cultivate. He said that as regards lower prices there was a difficulty because they must remember that the money that was spent on stuff for public institutions came out of the taxpayers' pockets, and they should try, as far as possible to save on this. He thought that one way helping would be discouraging to a great extent the importation of stuffs form abroad and Government institutions could set the example by purchasing native stuff. He did not agree with the policy of buying in the open market as they had to have reliable contractors who could live up to their contracts. He thought that while the thing might not be intrinsically wrong still he did not think the Government should rub the people up the wrong way, especially at this time when the doors of other countries were shut to our people and our population was increasing at such an alarming rate,— by giving our contracts to aliens when our own people were being urged to cultivate.

Mr. Burke said he did not think the Government should accept any tender below the recognized cost of production. They had all the advice they wanted on the subject; there was a certain limit below which experienced planters knew certain articles could not be produced,

and if the Government bought at that low price it would only mean lowering the standard of living of the agricultural labourer, which he thought should not be encouraged. In regard to the beef industry, he said that the Government had ruined the industry by accepting tenders at a price at which cattle could not be reared, and he thought that taxpayers rather than saving money were losing it. He thought that the Director of Agriculture should take up this matter with the Government in a departmental way.

Mr. Wint said it was not only necessary that the matter should be brought up now but it should be dealt with in an effective manner. He congratulated Mr. Phillips on bringing up the mattter but he did not agree with him that any arrangement as regards weight and prices would entirely help the situation. If the people were being forced to make their living out of the land they must be put in such a position that what they were making would support them. It was no use trying to do away with that because certain big people were making a lot of money out of importations. He thought imported food was a luxury. The general impression was that "back to the land" meant cultivation of bananas and citrus and the Government was doing everything to help in this direction, but there was a large number of people who could not engage in this cultivation; their activities were limited to the production of ground provision and things of the kind and that they needed Government assistance. He thought that the Government should protect native industry—the things that the people produce.

Mr. McDaniel said that only recently he had read that there was a proposal to send people from Jamaica to other countries to settle He said he did not think this should be necessary as there was a great deal of uncultivated land in Jamaica and if the Government were agriculturally minded there would be no unemployment question in Jamaica. He did not think that the alien who did not grow a single ounce of stuff should be afforded the opportunity of making tenders to the Government when there was a possibility of natives of the country being able to fill their requirements.

Mr. McKay said that the meeting was indebted to Mr. Phillips for having brought up the matter and suggested that it be left in the hands of the Chairman.

This was agreed to and the Secretary was directed to circulate the data obtained on the subject.

(b) *Constitution of Society*: The Secretary read letter from Messrs. Manton & Hart as follows:—

71 Barry Street,
Kingston, Jamaica,
20th April, 1937.

RE CONSTITITUTION OF SOCIETY.

We have your letter of the 14th inst.

The probable cost of the preparation of a Law and of Rules and Regulations thereunder would be between £25 and £50. If the Law is brought before the Legislative Council as a private measure a fee of £50 is payable to the Government, but if, as we expect, it is adopted as a Government Measure, no fee will be payable.

We await your further instructions in the matter.

(Sgd.) MANTON AND HART.

The Chairman outlined the position and after some discussion it was decided that he would take up the matter with the Colonial Secretary and on ascertaining what Government's position was in the matter he would report to the board.

(c) *Poisonous Weed (Lantana)*: The following letter from the Director of Agriculture was read:—

Department of Science and Agriculture,
CP : 593. Hope, Kingston P.O., Jamaica,
19th April, 1937.

I am in receipt of your letter, Ref. No. 10, dated 8th April, 1937, on the subject of the weed known as "Lantana."

2. The specimen submitted has been identified as "Lantana Camara," which is a well known weed in several other countries. It is reported as growing rapidly in India and Ceylon and has caused trouble in Hawaii and Fiji. It can, however, be kept under control by ordinary methods of cultivation. It is only likely under favourable conditions to attain a high population in land which has been cultivated and subsequently allowed to revert to bush. In Jamaica, however, it has been known for many years and there is no record of its becoming a serious nuisance. The plants do not appear to spread sufficiently rapidly to become a pest, possibly due to climatic conditions being unsuitable for it. There is no evidence that the variety grown here is poisonous, though it contains an alkaloid which is used medicinally. There is thus sound ground for its local use in certain circumstances as "bush tea."

(Sgd.) A. C. BARNES,
Director of Agriculture.

Mr. McKay said this letter should be printed in the press so as to give it wider circulation.

(d) *Agricultural Headman for Porus*: Report from Supervisor Hanson was read as follows:—

Stony Hill P.O.,
30th April, 1937.

With regard to the decision of the Board of Management that a Report should be made on conditions obtaining as regards request for the Headman's work in the Porus area, I beg to state that I visited the area on Wednesday, 21st inst.

2. From Mr. Rowland, Secretary of the local Branch, I gathered that the call for the services of the Headman is general; that during the Society's year just closed, the membership of the Branch Society increased over that of the two previous years, and that this was due largely to the Headman's services.

3. I enquired of the nature of the field work performed by the Headman and found it was confined to the budding and after care of citrus. As regards other crops, Mr. Rowland informed me that coffee pruning could now be included.

4. I further enquired as to the extent to which the Freeholders or other workers had acquired the art of budding and whether any such services would be available locally. With the exception of two or three who are always occupied on their own holdings the community still depends on the Society's Field Officers, though all over the area are bearing citrus trees budded by Agricultural Instructors over a series of years.

5. It is evident that the people need to make more use of the Agricultural Education being offered by this Society—a policy founded on the Gospel of Self Help.

6. I supervised Instructor Darby the following morning and found him at Fairfield at work. He informed me that the Headman was at Porus last year for about four months. He, the Headman, is now at Cross Keys. The feeling among other Branches is that such services should be distributed, consequently they are awaiting their turn. I, however, beg to recommend that the Headman be sent back to Porus for a few weeks, especially to follow up work already done, as otherwise much may prove valueless.

7. Please allow me to point out that a few of the Instructors, acting on my advice, conduct Field Day operations, when neighbours co-operate in working for one another, pruning, budding, etc., under the direction of the Field Officer. Hired labour is sometimes included, so that much is taught and learnt by all classes of workers. The Instructors who use this plan are loud in ther praise of its results. It appears advisable that all the Instructors be required to adopt it as a part of their system of out-door work, and to make special reports.

(Sgd.) A. P. HANSON.

Mr. Phillips said that there was a strong desire in the district that the Headman should be sent back there. It was a big fruit centre and he had done a lot of useful work there and his services had been much appreciated.

Mr. Wint said he did not agree that the services of the Headman should be confined to one Branch. While he was in the district the people should have made an effort to learn all they could from him so that they could carry on where he had left off.

Mr. Burke said that while on the subject, he thought that more attention could be paid by these officers to the general care of lime trees, of which there was a large amount scattered through pastures and which penkeepers hitherto had not given much attention. It was decided that this crop should be included in the citrus work.

The Secretary said it was the original attention that the Headman should move about from place to place and do certain work under the direction of the Instructors and this particular man had been moved about a good deal. The Porus Branch had been calling for him ever since he had left and he thought that the Supervisor having reported as he had done it would be wiser to let him return there for a short time.

It was decided that the Headman be sent to the Porus area for four weeks and that the Branch be advised that must take advantage of his services and learn all that was possible as he would not be sent there again.

(e) *Co-ordination of Agricultural Field Services*: The Secretary reported that as directed at the previous meeting he had circulated the Memorandum on this subject.

The Chairman mentioned that he was not in agreement with the conclusions that had been arrived at at the previous meeting, and he did not think the Government was going to agree but he would not force his opinions upon anybody. For the information of the Board he outlined the position.

Mr. Wint said he did not think that the services of the Plant Disease Inspectors and the Agricultural Instructors should be combined under the Agricultural Society as the Plant Disease Inspectors work was to prosecute and if the Agricultural Society Plant started to do that there would be trouble. He did not think any change should be made in that direction. He also thought that the Director of Agriculture should be Chairman,, not of the two Committees mentioned, but of all Committees and even of the whole Board of Management, and by doing this they would tie down the Government. He thought that all salaries should be paid by the Government and a grant given for experimental work, shows, etc., which would enable the Society to do real business in getting in touch with the people He, however, stated that he was preparing a memorandum on the subject, which he would like to place before the Board.

It was decided to defer the matter until Mr. Wint's memorandum came to hand, and the Acting Secretary was directed that immediately on receipt of this it should be circulated to the Members and if necessary a Special Committee of the Board called to discuss it.

(f) *Cane Farming*: The Secretary reported that as directed by the Board at the previous meeting he had circulated the Memorandum from the Holy Hill Branch on Cane Farming.

It was decided to defer the matter for the present as they did not yet know the result of the Sugar Conference now sitting and had no information yet as to the amount of canes the planters would be allowed to grow, and the Acting Secretary was directed to advise the Secretary of the Holly Hill Branch accordingly.

Statement of Accounts.

(a) *Statement for March*: The Acting Secretary stated that this appeared in the Minutes.

(b) *Statement for April*, was also presented:

With reference to the March Statement Mr. McKay said he noticed that £400 was estimated for Advertisements in Journal but up to then only £156 18s. 2d. had been realized and would like to be informed if there was any possibility of the balance being realized.

The Acting Secretary explained that they had got contracts but the amounts had not all been collected .

Mr. McKay also expressed surprise regarding the items—Fertilizer Experiments and Mango Extension, of which only £6 1s. 7d. was spent out of £25 in the former case, and £116 12s. 9d. out of £150 in the latter.

On being asked if he could offer any explanation on the matter. Supervisor Hanson said that the work was still in hand and the amount spent was not an indication of the work done as in many cases the Supervisor and Instructors did the travelling on their own and this was not charged to those particular accounts. In regard to the fertilizer experiments many of the big planters paid for the fertilizer that was used and in other cases the Society supplied the fertilizer and the labour was provided by the planter.

The opinion was expressed by several of the members that not only should the use of fertilizers be encouraged but a study should be made of the type of soils in relation to the fertilizers used.

The Director of Agriculture said his Department was carrying out experiments in this direction and suggested that the officers of that Department be consulted by the Society when planning experiments of the kind. The staff of the Department of Science and Agriculture was willing to advise the Supervisor and Instructors in such projects.

Communications.—

(a) *Letter from C.S.O. re Coolshade Land Settlement*: The following letter was read:—

Colonial Secretary's Office,
Jamaica, 22nd April, 1937.

No. 14/35.

Sir,

With reference to your letter No. 138, of the 15th February, 1937, I am directed to thank you for forwarding for the information of Government a copy of the Report made by you to the Board of Management of the Jamaica Agricultural Society on your examination of the Ex-Soldier Land Settlement at Coolshade, in St. Catherine.

2. The Government has authorised the Surveyor General to provide materials not exceeding £3 per house in value, to be regarded as a further loan, to assist Ex-Soldier settlers in the improvement of their houses.

3. The Government is also prepared to make a grant of £655 to provide a water supply at the Settlement, the amount to be spent as follows:—

(a) Gravity supply by pipe line from a Spring on privately owned property at Duxes to the Retirement Section of the Settlement, including acquisition of land and legal expenses	£390
(b) Repair old existing tank and provide suitable catchment at the River head Section of the Settlement	£265
	£655

This grant will, however, be conditional on the Parochial Board of St. Catherine consenting to construct and maintain the necessary works.

4. The Government will be glad if the Jamaica Agricultural Society will co-operate with the Surveyor General's Department and the Agricultural Department in regard to the future welfare of the Settlement.

(Sgd.) J. D. Lucie Smith,
for Colonial Secretary.

It was decided that a copy of this letter should be sent to the St. Catherine Parochial Board with a covering letter asking that they put this in hand as early as possible.

(b) *Letter from Secretary Pedro Branch* asking that posters with reference to the Country Fires Law be put up in prominent places,

was presented. The Acting Secretary was directed to inform the Branch that this has already been done.

(c) *Letter from President Jamaica Beekeepers' Organization expressing appreciation of assistance given by Society in their Honey Display at the Liguanea Show* was presented.

(d and e) *Letters from Mr. J. A. Banks and Mr. W. Z. Buckley thanking Board for Gratuity*, were presented.

Reports from Committees.

(a) *Instructors Committee*: The Acting Secretary presented the following:—

Kingston,
5th May, 1937.

Your Instructors' Committee met this morning and beg to recommend the following :—

1. That Foreman Little be informed that his application for increase of salary cannot be entertained at present.

2. Letter from the St. George Branch (Blackstonedge) in St. Ann, asking that they participate in the White Yam Competition now proceeding in that parish, was considered. Your Committee recommends that the Branch be informed that members having lands in the parish of St. Ann will be included in the Competition.

3. That application for one week's sick leave with doctor's certificate from Instructor Robotham be granted.

4. That applications for affiliation from the Lowe Wood and Sunbury Branches, in Clarendon be granted.

5. Letter from the Director of Agriculture setting out subjects for lectures by the Entomologist at the Summer Course at Hope in July, and asking for suggestions as to subjects which might form basis of lectures, your Committee recommends that of the subjects submitted the following four be suggested to the Director of Agriculture :—

(a) Control of Scale Insects affecting citrus, by spraying.

1. (b) Fiddler Beetles—Citrus.

4. (b) Wireworms—Irish potatoes.

(c) The control of insect pests without the use of insecticides, i.e., by agricultural practices and Biological Control.

i. Parasitic insects.
ii. Predatorial insects.
iii. Vertebrate Predators.

(Sgd.) G. Seymour Seymour, Chairman.
(Sgd.) P. St. L. Bacquie, Acting Secretary.

On the motion of the Director of Agriculture, seconded by Mr. Burke, the Report was adopted.

Diseases of Plants and Animals: Insect Pests.—

(a) *Panama Disease of Bananas—Report for January*: The Acting Secretary presented the Report on the incidence of Panama Disease during the month of January, and stated that copies had been sent to members of the Board.

Office.

(a) *Secretary's Report on Travelling for April*, was presented as follows:—

4th May, 1937.

Report on Travelling for April.

At the invitation of the Clarendon Branches Associated, I attended their meeting on Friday, 16th April last.

On Monday, 19th, I visited the experimental plot of bananas in the Providence area, near Ginger Hill. This plot has been treated with two applications of lime by Instructor Wray, and results are being watched to see what help this will give to the bananas in the area affected with leaf spot.

On the 30th April I attended a meeting of the Bull Savanna Branch, in St. Elizabeth. This Branch is at present very enthusiastic over their success in vegetable growing, and they now have a membership of 183. They have had a very successful season with their vegetables and expect to go in on a larger scale for the next. This being the case, they intend to make special application to the Board of Management for increased help in the way of Headmen. For 1936 there were 299 lugs of tomatoes sent away, and for 1937 there were 1,472 lugs of tomatoes, 251 crates of eggplants, and 100 crates of peppers exported.

, :In view of the fact that this industry shows signs of growing in magnitude, I take the opportunity at this early stage of advising that it needs more than Headmen or Foremen to tackle the work, and it seems to me that a special Instructor should be drafted to the area so that he could always be available for the full season, he being assisted by Headmen drawn from the districts around.

(Sgd.) P. St. L. Bacquie,
Acting Secretary.

Mr. McKay moved that the Headman in the Mocho area, who was well experienced in the growing of vegetables should be sent to the Bull Savannah area for the vegetable growing period, beginning October, at a salary of £5 per month, the Supervisor to make the necessary arrangements.

Mr. McDaniel seconded this and it was carried.

(b) *Letter of Resignation from Mr. C. A. Crearer*: The Secretary read the letter from Mr. Crearer tendering his resignation from the staff of the Society and asking if he would be permitted to continue getting advertisements for the Journal.

It was thought inadvisable that this should be done; that his successor should get the advertisements, and that Mr. Crearer be so advised.

As regards filling the vacancy caused by this resignation, the Acting Secretary reported that he had employed Mr. John Lyon on probation.

The appointment was approved.

(c) *Building of New Store*: The Chairman said he could take no action in this matter until he had got certain information from the Accountant as to the profits of the Seeds Department.

The Accountant said he was working on this and would have it ready for the next meeting.

Tree Planting.

The Acting Secretary presented Report by Supervisor Hanson on Tree Planting in St. Andrew for the Half-year ended 31.12.36, and advised the Board that he had forwarded a copy to the Colonial Secretary as usual.

He was directed to have it published in the Journal.

Shows:—

The Acting Secretary presented application from the Mizpah Branch to hold an All Island Show on Easter Monday 1938.

The Acting Secretary was directed to find out from the Clarendon Show Committee what they intended doing and to advise the Mizpah Branch that hey should hold a local Show and not an All Island Show.

Small Stock Subsidy.

An application from the Friendship Branch for a subsidy for a stud goat was presented. It was decided that the Supervisor should inspect the goat and report on it, and on his recommendation the subsidy would be granted.

Resolutions from Branches.—

(a) *Mt. Horeb re- appointment of a District Constable*: It was decided to refer this to the Inspector General of Police.

(b) *Mt. James re Red Peas*: The meeting was not in sympathy with this resolution, which asked for financial assistance and the amendment of the Country Fires Law for the growing of Red Peas.

New Members.

On the motion of Mr. Burke, seconded by Mr. McDaniel, the following new members were elected:

C. M. Aitcheson, Lawrence Tavern.
W. deM. Clarke, c/o Imperial Chemical Industries Ltd., P. O. Box 2, Kingston.
Mrs. Eustace Myers, c/o Fred L. Myers & Son, The Sugar Wharf, Kingston.
Rev. W. Copeland Bennett, Yallahs.
C. J. Brown, Hamilton, Bermuda.

Other Business.—

(a) *Membership on Advisory Committee of Holmwood Practical Training Centre*: The Acting Secretary referred to a memorandum which he had addressed to the Board suggesting that during the period he was acting as Secretary, Supervisor Hanson should take his place on that Committee.

This was approved, his travelling to be paid from headquarters.

(b) *Report by Instructor McLaren on visit made to Ex-Soldiers' Land Settlement in St. Thomas*, was presented and the Acting Secretary was directed to circulate this

(c) *Letter from Supervisor Hanson re renumeration for extra travelling* was read as follows:—

Stony Hill P.O.,
30th April, 1937.

I beg to bring to the attention of the Board of Management the hardships under which I have to travel into the Western Parishes beyond the limits of the seven parishes for which I am substantively the Supervisor.

From Stony Hill, my headquarters, to the Western border of Clarendon, is 51 miles. I must therefore travel 102 miles going and coming before beginning to receive any financial consideration.

In respect to the work in Manchester, for example, this may amount to a few miles at 6d per mile, though such a mission necessitates my incurring Lodging House or Hotel bill. The further west I travel, the greater the expense to be met in this connection

I beg to apply to the Board for a Subsistence Allowance of 10/- per day in addition to the limited allowance of 6d. per mile, not including the 102 miles referred to above.

When the acting appointment was settled at the March Meeting of the Board, it was decided that I be reimbursed as on the previous occasion when the Supervisor (West) acted as Secretary, namely, 6d. per mile from headquarters and no Subsistence Allowance. At the April meeting the matter was re-opened, however, and another proposal accepted. I not being privileged to speak on any such matter at the meetings could not call attention to the fact that this detail had been omitted from the minutes of the March meeting.

Due also to the fact that the recorded increment of £25, to which I had confidently looked forward for the current financial year has been disallowed, I trust the Board will kindly entertain the above application and oblige.

(Sgd.) A. P. HANSON.

It was decided that his travelling be paid from his headquarters and he get no subsistence allowance.

(d) *Letter from the Chairman Advisory Committee on the Banana and Citrus Industries*, appointing the officer filling Mr. Baxter's place a member of the Committee, was presented, and the appointment approved.

(e) *Invitation to the Board of Management to Annual Meeting of the Jamaica Beekeepers' Organization on May 11th*, was presented.

(f) *Letter from Bee Instructor re Census of Apiaries*, was read as follows:—

55 Windward Road, Kingston,
May 4th, 1937.

In considering improvements to our Beekeeping Industry, I beg to say it appears necessary that a complete census of all Beekepers in the Island should be made with details as follows :—

Name of Owner, Post Office, Location Apiary, Parish.
Number of Apiaries, Number of Colonies in each Apiary.

List of Beekeepers supplied me by Mr.... Baxter contains 117 registered and 58 unregistered, spread over the whole Island.

This record, however, is not representative of Jamaica's Beekeepers. In the parishes of Kingston and St. Andrew alone, there are over 100 Beekeepers, 126 Apiaries with 3,500 Colonies, the latter number can safely be added to by 500 Colonies to be located. It is therefore clear that record in possession of the Jamaica Agricultural Society represents only a small percentage of Beekeepers, and does not give enough detailed information.

The Acting Secretary of the J.A.S. has been asked by the Chief Inspector of Produce for a revised list of Beekeepers. I feel it is my duty to be in possession of data necessary to prepare a revised list. From records I have, although incomplete in details, additions thereto have been made.

Owing to restricted monthly travelling progress with census, and also in other directions have not been quite satisfactory. I am therefore suggesting for your consideration, removal of the travelling restrictions, as this will enable me to do more effective work among Beekeepers, and complete as early as possible census already started.

As I see it, the Industry requires continued intelligent assistance along modern lines, to raise its standard of efficiency and ensure Beekeepers better results.

The following are suggestions which might prove a step in the right direction :—

That Government by legislation should direct :—

1. How Bees are to be kept in Jamaica.
2. Sanitary conditions governing Honey extraction.
3. How Honey should be handled and graded, etc.
4. The kind of containers in which Honey should be exported.
5. Possibly marketing arrangements in London.

Since development to the Bee Industry is contemplated, the need for a census is obvious, and when that is completed, will supply some very interesting figures relative to Bees in the Island, as well as a reasonable basis for computing the average return—and an eye-opener to those interested in the pursuit.

Awaiting your favour.

(Sgd.) HOLON HERON,
Instructor in Beekeeping.

This was agreed to but it was decided that the information should not be given to the trade.

The Acting Secretary then read a letter from Hon. Dr. Hudson asking that the Bee Instructor pay a visit to Westmoreland.

It was decided that the Chairman should see the Bee Instructor and come to some arrangement regard to the extra travelling, and the Acting Secretary was directed to advise Dr. Hudson that his letter was receiving attention.

(g) *Application from Canadian Trade Commissioner for leave of Absence as a Member of the Show Committee*, was presented.

This was granted.

(h) *Honey Samples*: These were laid on the table.

(i) *Invitation from President Westmoreland Branches Associated to attend their Half-yearly Meeting on the 15th May*, was presented and noted.

The meeting then adjourned to Wednesday 2nd. June 1937.

OBITUARY.

We greatly regret to record the passing of an invaluable member of this Society through the sudden death of Major W. H. Plant, J.P., on the 21st., inst.

Major Plant was one of the staunchest supporters of the J. A. S., and served on the Board of Management for a number of years, occupying the position of First Vice-President from December 1928 to July 1932. During this period many issues of vital importance arose affecting the welfare of the Society which were handled and disposed of in a masterly manner, resulting in a higher measure of appreciation of our services by the general public.

We join with other organizations with whom he was connected in expressing much sympathy to Mrs. Plant and her two sons in their irreparable loss.

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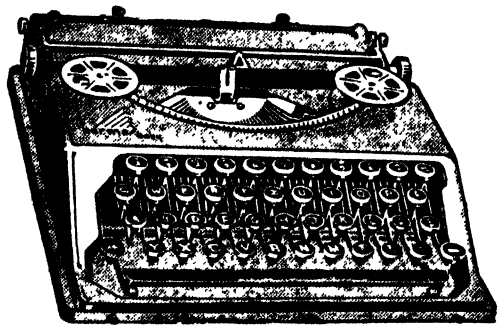
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TOBACCO.

DEPARTMENT OF SCIENCE AND AGRICULTURE.

Tobacco Circular No. 5. *1st May*, 1937.

Tobacco Diseases and Pests.

Diseases.—In Jamaica, fortunately, tobacco diseases are not very numerous as yet. The commonest are Mosaic disease and the disease caused by Nematodes. Tobacco-wilt or stem-rot, which in some other countries affects the whole area, is rather rare. Black root-rot or slime disease, another form of tobacco-wilt, is also rare. Fungus diseases such as Phytophthora and Pythium are also to be found, but usually in the nurseries. Rust spots on the leaves are to be seen here and there in the fields and fungus spots are common in the barns during damp misty weather and are to be seen on the drying leaves. This spot is sometimes known as "water spot," also another spot disease known as "frog eye" is to be found on the drying leaves in barns where the ventilation is bad and the conditions are moist.

Mosaic Disease.—This is the most important disease in Jamaica, as it is to be found everywhere on all tobacco plots throughout the Island. Often the 'principal' crop is not very badly affected, but usually the 'ratoon' crop is full of mosaic-diseased plants. The leaves of a mosaic-diseased plant are mottled in colour, and are marked rather like marble. They are usually fairly thick in texture, and dry up coarse and uneven in colour and do not burn well; also the size and shape of the leaf is affected and an altogether undesirable type of leaf is obtained. The origin of mosaic disease is still unknown, though it is evidently a virus disease. A practical cure has not yet been found. However, it is quite certain that many wild plants growing in the tobacco fields and surrounding them are infected and can infect the tobacco plants; insects, for example, can bring the disease over from mosaic-diseased plants to the tobacco. Many planters do not keep their fields sufficiently clean of weeds, amongst which are many diseased plants, also they plant tomatoes and cassava amongst or near to their tobacco plants, and quite often also a few peppers. The first two plants are usually attacked by mosaic before the tobacco plants, and the last plant, pepper, has been proved to be a mosaic-causing plant, as a labourer who handles a pepper plant can infect row after row of tobacco plants by handling them immediately after. Mosaic disease is highly infectious and can be distributed throughout a tobacco field by the labourers touching the plants in the course of their duties of catching caterpillars or suckering. The best method of stopping the disease from spreading is to rogue all early affected plants as soon as possible and burn them. Seed should not be taken from mosaic-diseased plants; seedbeds should be regularly and carefully inspected and any mosaic-diseased suckers immediately pulled out and destroyed. Late infected plants, i.e., plants which have good lower leaves, but whose top leaves are infected, should be marked and immediately topped, and no one should be allowed to handle the plant and bring the disease over to healthy plants. If necessary, *one* man should be detained to do nothing else but look after the mosaic plants, i.e., keep them free of caterpillars and clean of side suckers.

Nematodes.—(Eelworms). The disease caused by these usually occurs on soil which has had no rest for years, and is already infested by eelworms. The plants are attacked at the roots on which galls are

formed, and this shows up above ground as the affected plant is stunted and unhealthy looking with small yellowish leaves. In the seedbeds also young suckers will be found stunted and discoloured, and will not grow where these parasites have attacked them. Thorough and clean cultivation during the dry months, giving sufficient aeration and sterilization by sun, is the best way of destroying eelworms already in the soil, as they have nothing to feed on. Then when sowing nurseries and planting out use a fertilizer. The fertilizer helps on the quick growth of the plants, and even if they are attacked by nematodes, they are often able to throw out new roots and outgrow the bad effects of the diseased roots. Woodash, or better still tobacco ash, collected by burning all the tobacco stalks of the previous crop, helps overcome nematode disease and promotes better growth, if given in suitable doses to each plant soon after planting out, also in the nurseries on ground where nematodes are feared tobacco ash should be mixed in with the soil before sowing the seed.

Phytophthora, or "damping off," is usually found in the seedbeds. It is a fungus disease caused by too much moisture, and insufficient sun. As a preventative seedbeds should be sprayed with Bordeaux or Cheshunt mixture once every four days, and in rainy, cloudy weather, watering should be done as little as possible. Shades should be kept over the young seedlings during heavy rain, and taken off during fine weather to open up the seedlings to the sun. If a bed is found infected, it is best to destroy it and the surrounding beds, also the shades, by placing them on the beds and burning them, to keep the infection from spreading, otherwise all the beds may become infected and all suckers lost, which happens quite frequently locally. Timely thinning out of the seedlings also helps prevent fungus disease, as air can reach the soil round the roots of the remaining plants.

Pythium —This fungus disease is usually found in the seedbeds, when the suckers are almost ready for planting out. The affected suckers collapse and on examination it is found that the stem base, where it comes in contact with the ground, has become slimy and rotten. In the fields also this disease is to be found, usually where the soil is very wet, and nearly always soon after the suckers have been planted out from the nurseries, while they are still young. Spraying with Bordeaux or Cheshunt mixture is a preventative in the seedbeds, but in the fields nothing practical can be done except replace the affected plants by using older suckers from the nurseries, i.e., suckers of forty-five to fifty days old whose stems are already harder from age and able to withstand the disease. Also these replacements should not be planted too deep in the ground, and the old soil surrounding the affected plant should be replaced by fresh soil.

Spot Diseases.—The weather has much to do with spot diseases, so nothing much can be done to prevent them, except in the barns. The barns or tobacco houses should be kept as dry as possible and good deep drains made round them, also the floor should be dug up from time to time to keep the soil dry. Air must circulate in a barn full of green tobacco to prevent "sweating," fungus and black spots, so in damp weather charcoal fires must be kept burning between the rooms and all doors and windows kept closed. The hot air from the charcoal fires will rise and keep circulating. In fine weather all doors and openings must be kept wide open to allow as much dry air as possible to go through the hanging tobacco, and the rails should be moved from time to time and re-spaced to prevent any leaves from sticking together and so becoming sweated.

Rotting of leaves in stick press.—After the tobacco is dried, taken down and placed in a "stick press," care should be taken that it is not left too long there before "stripping" off the leaves, especially if the main tobacco stalks are still green, which they usually are. The leaves begin to ferment and soak up moisture from the still undried stalks of the plant, and the heat generated can be so great as to cause the leaves to become rotten. Tobacco should not be kept in a stick press for more than 48 hours, unless the press is very low without much pressure on it. Even then it is better to strip the leaves off as soon as possible and do all the necessary fermentation when there are sufficient "manejos" (heads of about 40 leaves) or "matulas" (large bundles of about 250 leaves) ready to be placed in a pilon (staple).

Pests.—Firstly, there are ants to contend with in the nurseries, and very formidable they can be, as they take away the seed which are about to germinate, and can clear a bed of all seed in one night. In circular No. 1 will be found methods of dealing with these pests. Crickets and cut-worms are found both in the nurseries and plantation, and may be destroyed by spreading out bait round the plants—Paris Green mixed with meal and molasses is one of the best baits. There are many caterpillar pests which feed on the tobacco leaf and so damage it, such as the cut-worm (*prodenia*), *plusia*, *heliothis* (*bud worm*) and the horn worm These can be destroyed by spraying the plants with a 1-1½% lead arsenate solution or dusting with a lead arsenate mixture. The flea beetle, also grasshoppers, may be destroyed by spraying with the same solution. There are also the *Nezara Viridula*, commonly called the "stink bug" which must be caught by hand, and the green hoppers of the *Capsidæ* family which are almost impossible to eradicate and which can damage the leaves considerably if they appear in great numbers. Tobacco lice do not seem to appear in Jamaica, which is very fortunate, as much havoc can be caused by them. Although spraying with a solution of lead arsenate is mentioned above, it is not recommended in the plantation but *only for seedbeds*, as in dry weather the solution sticks to the leaves so much that it will not come off even when the leaf is dried and cured, and so renders it unmarketable For field purposes *dusting* with lead arsenate and fine dust should be resorted to. This dust remains on the back of the leaves long enough to kill off all caterpillars, but falls off in time, especially once the leaf is dry. *Lasioderma* or Tobacco weevil can do much damage to the cured leaf, especially when kept in store for some time. All stocks of tobacco seed should be kept in well corked and sealed bottles, as lasioderma breed freely in old seed. Seed should be thoroughly dried before sealing up in bottles. The pilon room, where the stripped leaf is kept, should be cleaned out regularly and if necessary a solution of Paris Green, which is very poisonous, should be sprayed into every corner and crack where the weevil may be hiding and breeding. All stocks of tobacco should be turned and shaken out at least once every two months. Fumigating is the best means of ridding stored tobacco of weevil and there are some powerful fumigants on the market which the makers claim will destroy the unhatched eggs without affecting the taste or flavour of the tobacco.

It must be borne in mind that everything possible should be done to prevent damage to the leaves, especially the binder type leaves from the 'principal' crop, as unbroken leaves fetch higher prices than broken ones. A high priced binder leaf can become a cheap filler or even the still lower priced 'fonque' leaf through being badly damaged.

Conclusion.—To be successful in growing tobacco it is very necessary to cultivate the soil very thoroughly, drain the soil well, clean weed regu-

larly to keep down all contagious plants and keep as free as possible from insect pests; take great care in the nurseries to produce first-class suckers from first-class healthy seed and never plant out doubtful or weedy-looking suckers; catch caterpillars by hand or dust with lead arsenate, to keep them from spoiling the leaves; handle all plants at all times with care and likewise when harvesting take care that the leaves are not damaged; and finally in the barns great care should be taken at all stages of the work to prevent damage by rough handling or through over-crowding and consequent spoiling of the leaves through "sweating" or fungus spots, and do not forget that circulating air is necessary to keep the drying leaves sound.

(Sgd.) F. W. WINCKLEY,
Tobacco Specialist.

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THE CONTROL OF INSECT PESTS BY MEANS OF INSECTICIDES.

(By W. H. Edwards, D.I.C., F.E.S., Government Entomologist, Jamaica.)

(Concluded from the May Journal).

Flea Beetles.

Leaves of tobacco, tomato, eggplant, beetroot and many other plants are frequently found punctured with an innumerable number of holes. When only the tissues of the lower side of the leaves are affected, little grey patches of dried epidermis are seen from the upper surface.

Such lesions when numerous interfere with the normal functions of the leaves, and if young plants are affected their vigour may become considerably reduced and their growth greatly retarded.

Such damage is done by minute beetles known as "flea beetles" on account of their small size, their activity, and the power they exhibit in jumping over comparatively long distances as soon as disturbed.

There exists in Jamaica several species of flea beetles, a small brown one frequently infests eggplant and tomato whilst another species which is green in colour with a yellowish head is not only a serious pest of beet but also commonly attacks the tomatoes.

Control:

Dust the plants with powdered arsenate of lead, 1 part mixed with 5 parts of finely ground dry lime or wood ashes.

Sodium fluosilicate dust may also be used for the same purpose. Bordeaux Mixture when sprayed on the plants to combat fungus diseases also acts as a deterrent for flea beetles.

Silver Fish.

The Silver Fish (*Lepisma saccharina, L.*) is that glistening pearly grey insect with three long tail-like appendages often seen when books, papers, clothing or similar articles are suddenly moved. It is one of the most destructive household pests, attacking the bindings of books and gnawing irregular patches on the surface of wall papers, on the covers of books, photos, pictures, cardboard, etc. It feeds on pastes and on starchy substances and also does much damage to starched clothing, to the paste fastening wall paper, etc.

These insects live many years and develop slowly; they are able to go without food for almost a year.

Remedies:—Silver fish can be poisoned in numbers by using poisoned baits. Such can be prepared by mixing 12 parts of Sodium fluoride powder in 100 parts of wheat flour or by making a paste of ½ to ¾ oz. white arsenic to one pint of wheat flour and adding enough water to make a thin paste by boiling.

The poisoned starch should be poured on small pieces of stiff paper which when dry are rolled into cylinders with the paste inside. The bait should be placed in out-of-the-way places frequented by the insects. Both mixtures are poisonous, the second highly so; all necessary precautions should therefore be taken when they are handled.

Pyrethrum powder dusted in fissures between boards and other places which they haunt is of value, but requires frequent renewal.

Where the insects are present in large numbers, Fly Killer, or a saturated solution of Paradichlorbenzene in Carbon Tethrachloride used as a spray gives excellent results, the latter having more lasting effects.

Roaches.

Plaster of Paris: Put in a saucer a mixture of Plaster of Paris, 1 part, and flour 3 parts. Place bridges made of pieces of wood or paper over the layer of powder and put the baited saucer where roaches abound. In another flat plate nearby, put pure water and some pieces of wood to act as bridges.

The roaches after eating the powder become thirsty and drink water. This makes the Plaster of Paris set and clog the intestines.

Sodium Fluoride: On account of its high effectiveness, cheapness and ease of application, Sodium Fluoride has become the standard remedy for the control of roaches in dwelling houses or other buildings.

The powder is merely scattered on the shelves and other places where the roaches are known to run.

This chemical being somewhat poisonous, reasonable precaution should be taken to prevent children from gaining access to the places where it has been applied.

Proprietary Roach Killers: There are on the market a number of proprietary substances sold for the destruction of roaches, most of these being ineffective. There is, however, a phosphorus paste which gives very satisfactory results. It should be spread on bits of paper which are placed where the roaches frequent.

Trapping: A very practical method of capturing cockroaches in numbers consists in pouring into clean jam or marmalade pots a mixture of water and honey in sufficient quantity to fill one inch of the containers. Such traps are set in places haunted by the pest.

Roaches being partial to the bait, fall into the syrup without afterwards being able to climb the slippery sides of the glasses.

Grasshoppers and Locusts.

In Jamaica these insects seldom reproduce themselves in very large numbers and swarms of locusts such as occur in other countries are unknown.

During periods of drought, however, when the grass and weeds in which they usually live, become dry and unattractive, grasshoppers and locusts attack readily the cultivated plants in gardens or in fields.

The cheapest and most effective method of dealing with these pests under such conditions is to spray the plants to be protected with Lead Arsenate, and to scatter on the ground around them attractive baits which have been previously poisoned with Paris Green or Calcium Arsenate.

As grasshoppers do not feed at night but have a good appetite in the early hours of morning, poisoned baits should be applied in the early morning.

Crickets.

These insects spend most of their life underground eating off all roots they meet whilst burrowing their tunnels. They come out at night to

feed and nip at the ground level all tender vegetation; many plants in the vegetable and flower garden and strawberry in particular are thus frequently destroyed.

As the pest comes out at night to feed, poisoned bait should be scattered on the ground around the plants. The entrance to their tunnels usually remain open or are marked by pieces of cut leaves, so that the places where they live buried in the ground can be easily found, the pests removed and destroyed.

Trapping: In gardens these insects can also be trapped in tobacco tins containing a small amount of water, sunk in the soil with the top rim level with the surface of the soil where they are numerous. The insects fall into the water, and being unable to climb out may be removed and killed in the morning.

Destruction of Rats by the use of Poisons.

Rats will take poisoned baits readily when conveyed in a proper medium and when they do not find food readily in fields or in buildings. Arsenic is excellent because in the small doses necessary to kill rats it entails little risk to domestic animals which may eat the body of a rat so poisoned, as the small quantity of arsenic in the body merely acts upon them as a purgative.

Strychnine and phosphorus are also very effective but they are most dangerous and must therefore be used with the greatest caution.

Barium carbonate is very good, and probably the safest, poison; it has the advantage of being tasteless and odourless.

After rats have eaten poison they usually become thirsty and make their way to water. It is therefore necessary before poisons are applied, to place wire netting over water tanks, etc., as otherwise the rats falling in may have serious consequences for the consumers of the water.

Rats frequently display a curious instinct after many have been killed with a particular poison. They become suspicious, so that the kind of poison used has to be changed.

Poisoned baits should always be placed well within the burrows and thus out of reach of other animals. When the poisoned baits have to be applied in a house or other buildings which they use as feeding grounds but in which they do not nest, the poisoned food should be placed out of access of domestic animals and in liquid or powdery materials which cannot be carried away leaving the poisons in exposed places.

An excellent recipe for the use of Barium carbonate is the following:—

Mix 1 part of Barium carbonate with eight parts of cornmeal, add a little water and knead the mixture into a stiff dough and place a teaspoonful of this in places which the rats frequently visit.

The Department of Science and Agriculture prepares and sells to the public an excellent Rat Poison which is a mixture of 5 parts of Arsenic and 1 part of Barium carbonate. The mixture can be put inside pieces of bread, meat fish, banana and sweet potato, etc., or, for reasons already given, used in a powdery medium can be prepared as follows:—

Take 1 oz. of the Arsenic and Baryta mixture and thoroughly mix with 1 lb. cornmeal.

Add 1½ quarts of water and cook during 5 hours stirring the mixture constantly. The resulting preparation will be sufficient to load 10 bamboo joints.

Setting the Bait:

Procure a supply of bamboo joints 2½ to 3 inches in diameter and 7 to 9 inches in length. Pour some of the poisoned bait into the bottom of each, to a depth of not more than 3 inches, so that domestic animals cannot reach the poison, and place the baited receptacles in houses, barns, etc., out of the reach of children and domestic animals and where it cannot be dropped.

The bait should be as fresh as possible, and if convenient, should be newly prepared each time.

Cost:

Rat Poison can be purchased from the Department of Science and Agriculture through a licensed druggist at the following rates delivered at any Railway Station:—

In bulk including container at 7d. per lb.

In strong manilla envelopes holding 1 oz. each at 9d. per 16 packets.

Freight will be charged if delivery is made by coastal boat. The cornmeal and bamboo joints can be obtained locally.

CHAPTER VI.

TABLES.

DILUTION TABLE FOR THE COMMONER INSECTICIDES MENTIONED IN THIS BULLETIN.

Material.	Amount of Insecticide needed to make			
	100 gals. of spray	50 gals. of spray.	5 gals. of spray.	1 gal. of spray.
Arsenate of lead (powder)	2 lbs.	1 lb.	1½ ozs.	2½ teasp.
Arsenate of lead (paste)	4 lbs.	2 lbs.	3 ozs.	5 "
Calcium Arsenate	1½ "	¾ lb.	1½ ozs.	2 "
Nicotine sulphate 1-800	1 pint	½ pint	2 tblsp.	1½ "
Nicotine sulphate 1-400	1 qt.	1 pint	4 "	3 "
Oil Emulsions: when strength is stated: 1-20	5 gals.	2½ gals.	1 qt.	8 fl. ozs.
1-25	4 "	2 "	1½ pints	6½ " "

DILUTION OF LIQUID INSECTICIDES.

When strength desired is:	
1 in 40.	add 1 teaspoonful of insecticide to 1 gill of water
	add 1 tablespoonful of insecticide to 1 pint of water
	add 1 fluid ounce of insecticide to 1 quart of water
	add 1 wineglassful of insecticide to ½ gallon of water
	add 1 pint of insecticide to 5 gallons of water

1 in 60.	add 2 teaspoonful of insecticide to 3 gills of water
	add 1 tablespoonful of insecticide to 1½ pints
	add 1 fluid ounce of insecticide to 3 pints of water
	add 1 wineglassful of insecticide to 6 pints of water
	add 1 pint of insecticide to 7½ gallons of water
1 in 80.	add 1 teaspoonful of insecticide to ½ pint of water
	add 1 tablespoonful of insecticide to 1 quart of water
	1 fluid ounce of insecticide to ½ gallon of water
	add 1 wineglassful of insecticide to 1 gallon of water
	add 1 pint of insecticide to 10 gallons of water
1 in 100	add 1 fluid ounce of insecticide to 5 pints of water
	add 1 wineglassful of insecticide to 5 quarts of water
	add 1 gill of insecticide to 3 gallons of water
	add ½ pint of insecticide to 6¼ gallons of water
	add 1 quart of insecticide to 25 gallons of water.

EQUIVALENTS OF THE LIQUID MEASURES MENTIONED ABOVE.

1 teaspoonful approximates	⅛ of an ounce
1 tablespoonful approximates	½ of an ounce
1 port wineglassful approximates	2 ounces
1 ordinary drinking glass	10 ounces (½ pint)
1 cigarette tin holds approximately	9 ounces.

AMOUNT OF INSECTICIDE REQUIRED PER ACRE.

When Distances between plants are		No. of plants per Acre.	Weight (total) in Cwt. per Acre.	Volume Gals. per Acre.
			Rate: 1 oz. per plant.	Rate- 1 fl. oz. per plant.
3″ x	12″	174,240	97.23	1,089
6″ x	6″	174,240	97.23	1,089
6″ x	9″	116,160	64.82	726
6″ x	12″	87,120	48.61	544.5
9″ x	9″	77,120	43.21	481
9″ x	12″	58,080	32.41	363
12″ x	12″	43,560	24.30	271 8
12″ x	15″	34,848	19.44	217.8
12″ x	18″	29,040	16.20	181.5
12″ x	24″	21,780	12.15	133.6
12″ x	30″	17,424	9.72	108.9
12″ x	36″	14,520	8.10	90.75
12″ x	42″	12,446	6.93	77.8
12″ x	48″	10,890	6.07	68
15″ x	18″	23,232	12.96	145.2
15″ x	24″	17,424	9.72	108.9
15″ x	30″	13,939	7.78	87.1
15″ x	36″	11,616	6.48	72.6
15″ x	42″	9,956	5.55	62.25
15″ x	48″	8,712	4.86	54.45
18″ x	18″	19,360	10.80	121
18″ x	24″	14,520	8.10	90.75

AMOUNT OF INSECTICIDE REQUIRED PER ACRE, *contd.*

When Distance between plants are	No. of plants per Acre.	Weight (total) in Cwt. per Acre.	Volume Gals. per Acre.
		Rate: 1 lb. per plant.	Rate: 1 qt. per plant.
18″ x 30″	11,616	6.48	72.6
18″ x 36″	9,680	5.40	60.5
18″ x 42″	8,297	4.63	51.83
18″ x 48″	7,260	4.05	45.4
20″ x 24″	13,068	7.29	81.7
20″ x 30″	10,454	5.83	60.53
20″ x 36″	8,712	4.86	54.45
20″ x 42″	7,467	4 16	46.7
20″ x 48″	6,534	3.64	40.8
2′ x 2′	10,890	6.07	68
2′ x 3′	7,260	4.05	45.4
2′ x 4′	5,445	3.03	34
2′ 6″ x 3′	5,808	3.24	36.3
3′ x 3′	4,840	2.70	30.25
3′ x 4′	3,630	2.02	22.7
3′ 6″ x 3′	4,148	2.31	25.9
		Rate: 1 lb. per plant.	Rate: 1 qt. per plant.
4′ x 5′	2,178	19.44	544.5
4′ x 6′	1,815	16.20	453.75
4′ x 8′	1,361	12.15	340.25
4′ x 12′	907	8.10	226.75
6′ x 6′	1,210	10.80	302.5
6′ 8′	907	8.10	226.75
6′ x 12′	605	5.40	151.25
8′ x 8′	680	6.07	170
8′ x 10′	544	4 86	136
10′ x 10′	435	3.90	108.75
10′ x 12′	363	3.24	90.75
11′ x 11′	360	3.21	90
12′ x 12′	302	2.70	75.5
12′ x 15′ (double root)	484	4.32	121
		Rate: 5 lbs. per plant.	Rate: 1 gal. per plant.
15′ x 15′	193	8.61	193
19′ x 19′	120	5.35	120
20′ x 20′	108	4.82	108
24′ x 24′	75	3.34	75
25′ x 25′	69	3.08	69
33′ x 33′	40	1.78	40

QUANTITIES OF INSECTICIDES APPLIED PER UNIT OF SURFACE.

When Rate per square Yard is:	Approx. equivalent per square chain.	Approx. equivalent per Acre.
¼ oz.	7½ lbs.	75 lbs.
½ oz.	15 lbs.	150 lbs.
¾ oz.	22½ lbs.	225 lbs. or 2 cwt.
1 oz.	30 lbs.	300 lbs. or 2.68 cwt.
1¼ oz.	37½ lbs.	375 lbs. or 3.35 "
1½ oz.	45 lbs.	450 lbs. or 4.00 "
1¾ oz.	52½ lbs.	525 lbs. or 4 70 "
2 ozs.	60 lbs.	600 lbs. or 5.36 "
2¼ ozs.	67½ lbs.	675 lbs. or 6.00 "
2½ ozs.	75 lbs.	750 lbs. or 6.70 "
2¾ ozs.	82½ lbs.	825 lbs. or 7.36 "
3 ozs.	90 lbs.	900 lbs. or 8.03 "
3¼ ozs.	97½ lbs.	975 lbs. or 8.70 "
3½ ozs.	105 lbs.	1,050 lbs. or 9.36 "
3¾ ozs.	112½ lbs. or 1 cwt.	1,125 lbs. or 10.00 "
4 ozs.	120 lbs.	1,200 lbs. or 10.70 "
5 ozs.	150 lbs.	1,500 lbs. or 13.40 "
6 ozs.	180 lbs.	1,800 lbs. or 16.07 "
7 ozs.	210 lbs.	2,100 lbs. or 18.80 "
8 ozs.	240 lbs.	2,400 lbs. or 21.43 "
1 lb.	484 lbs. or 4.3 cwt.	4,840 lbs. or 43.22 "

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TREE PLANTING IN ST. ANDREW.

Stony Hill,
14th April, 1937.

P. St. L. Bacquie Esq.,
Acting Secretary J. A. S.,
Kingston.

Dear Sir,

With regard to Tree Planting in St. Andrew, I beg to state that as mentioned in my last Report dated 25th October last, the Annual Distribution came off at Hope Gardens on Wednesday 11th November last.

The seedlings distributed numbered 1060. Five hundred were distributed subsequently. Of the number 600 were planted on the reserve connected with the K.S.A.C. watershed around Padmore, and from which the Red Hills area also expects a water supply eventually The remainder of the plants was sent to various Branch Agricultural Societies, some as far as Glengoffe. The timber plants distributed comprised:—Juniper Cedar, Native Mahogany, Red-wood, Mahoe, Wild Tamarind, Pinus, Bullet-wood, Wild Prune and Bitter Damsel. The great bulk of these was supplied by the Government Conservator of Forests. It may be mentioned that the people showed a keenness for improved varieties of sugar cane suckers in connection with this distribution. As many as 5,000 tops chiefly "P.O.J.2878" were distributed.

The weather condition was favourable, and the plants had a good start which has been standing them in good stead in spite of the recent drought.

The restriction placed by Government Order on the burning of the land though not kindly received by many of the Agriculturalists in this area has had and is having some beneficial results in that a good many will not take the risk of setting fire. A case of conviction in the R.M. Court at Stony Hill last month for a breach of the Country Fires Law appears to have had a very far reaching effect in the immediate surroundings where previously many a smoke had told its sickening tale. Even then however, the burning was confined to the small area actually being cleared for planting

The campaign against the Barking of Trees has also bourne fruit. Personally I had posters put up in out-of-the-way places where the evil prevailed. Other posters were sent to School Teachers who explained them to the Juveniles. Less barking is seen and complaints are few.

The Free Holders value their growing timber plants very highly, and treat them quite intelligently, but land room is limited and they are bound to restrict planting of this kind. They have been persuaded all along not to cut down without replanting.

Mr. Henderson, the Agricultural Instructor has had much to do with the Distribution referred to above.

I am, Dear Sir,
Yours faithfully,
(Sgd.) A. P. Hanson

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WE MUST FEED OUR CHILDREN BEFORE WE CAN EDUCATE THEM.

Every School Child should have a Quart of Cows' Milk every day.

(By a Medical Practitioner.)

The two things a child needs most are affection and vitamins. A child very soon requires just as much food as an adult for though his weight is less, anyone who has had to contend with the bouncing exuberance of children knows that they expend an excessive amount of energy By the time he is three your small son (or daughter) should be settling down to a three-meal-a-day adult diet. If during these first three years you have given him a reserve of vital food elements—vitamins and mineral salts—he will be sturdy, with a straight back, strong straight little legs, good firm flesh and sound teeth.

The recent discovery of vitamins and our present knowledge of what foods contain them, should have relegated scurvy and rickets to the museum. Neither is unknown among the under-nourished peasant children of this country, nor among the improperly nourished children of our better classes. Any woman who has motored in the country and seen a peasant child standing by the roadside in a chemise with a protruding abdomen and swollen wrists has seen a case of rickets. The disease is caused by a lack of vitamins in the diet and the children in Jamaica usually outgrow it because they are so much exposed to direct sunlight from which they absorb those life-giving chemicals we call vitamins. When a child eats dirt, or a pregnant woman eats plaster off the walls, the system is crying out for vitamins and mineral salts—magnesium, calcium, potassium, etc.

Pure Cows' Milk.

The answer to the whole problem of our under-nourished elementary school children—to the whole future of the native race in Jamaica I believe—is pure cows' milk Pure cows'milk is a perfect food, almost as good for adults as for children. Recent experiments in England have shown that children given cows' milk evry day in a certain school improved beyond recognition in health while the difference between them and the half of the school not given milk was marked A London physician tested the amount of energy he had stored by the amount of work he could do without fatigue first on his usual diet and then with the addition of a pint of cows' milk every day. The gain in energy was remarkable

Every school child in Jamaica should have a quart of cows' milk each day or its equivalent in condensed milk properly reconstituted plus cod liver oil (a tablespoonful). If the means could be found to provide this we could be satisfied that the children were getting the vital food factors, for milk contains every food element necessary to growth. I believe, too, that we would reap enormous benefits in the future for it is highly probable that the dull mentality of the mass of Jamaica Negroes is directly traceable to their inadequate diet.

Under-nourished.

That there are numbers of children in the elementary schools who are actually suffering the pangs of hunger is undeniable; that there

are others with full stomachs and chubby looking limbs who are nevertheless under-nourished is equally true. There is very little besides starch in "ground provisions," the staple of peasant diet.

The following is a rough idea of the very minimum a school child (say between nine and fourteen) should have to eat daily in order to be properly nourished. Breakfast might consist of cornmeal porridge (inexpensive and very nourishing) and an egg. The mid-day meal should include soup, ground vegetables and a slice of bread and butter or bread and jam. For supper, cocoa (an excellent food for children) and bread and butter or bread and jam. This is the bare minimum in which the breakfast egg and the small bit of soup meat in the soup are depended on for protein and other vital elements. If to the mid-day meal could be added a bit of meat, fresh fish or even salt fish and a green vegetable the child could be said to be a nourished child. Ackee, while it does not contain a good deal, has some food value and helps to make salt fish palatable. Avocado pear is nourishing food and so is banana. Citrus fruit is an essential in the diet of your small children.

Orange Juice.

Undernourishment in the early stages can retard cerebral development and make an idiot of your child. If your mother raised you without knowing anything about vitamins you can thank a benign Providence that made her blunder, for all that, into giving you the right foods. But surely this is no reason for shutting your ears to the wonderful scientific discoveries of your own age and not taking advantage of the wealth of information for your child's sturdy growth which is so easily at your command, which makes it possible for you to plan his diet in such easy confidence! Put your faith in cow's milk, cod liver oil and orange juice and you cannot go far wrong. Orange juice is given almost from the start and a half teaspoonful of cod liver oil twice a day is given if a powdered patent milk must be substituted for mother's milk during the first year. By the time he is four months old your baby should be taking a whole orange a day and all through his or her school life orange juice should go hand in hand with a daily quart of cows'milk and green vegetables, for the particular vitamins contained in citrus fruit are destroyed by heat and so are best taken in the form of fresh fruit.

Cereals.

When he is nine months old you begin to establish solids with the scalded egg The egg is a wonderful food Cereals, either cooked or uncooked, contain a certain amount of food value (salts and starch), but are chiefly useful for supplying "roughage" and the excuse for good pure cows' milk. Children should have plenty of liquid—three quarts a day in addition to their quart of cows' milk. A small amount of meat; varied with fresh fish or egg dishes, can be given at the mid-day meal as soon as the child is established on adult diet. School children should have a fairly large breakfast (cereal and egg), their largest meal in the middle of the day, and a light supper (cocoa and bread and butter or cheese) half an hour before they are put early to bed.—*Clipping.*

Reproduced from the Journal of the British Honduras Agricultural Society.

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(Reproduced from the London Daily Sketch of 14.3.37.)

A green tipped fruit that is rather indigestible?
You're wrong.
A golden, brown-speckled fruit that is full of health-giving foods?
You're right.
For a ripe banana is the highest of all fresh fruits in caloric value, giving the remarkable total of 460 calories per pound!
Which, in simpler language, means that bananas are very good for you indeed.

When You're Tired.

Unripe bananas, it is true, contain starch. But in ripe bananas this starch turns into natural glucose—the most energy-giving of all foods, and the most quickly absorbed into the system.
If you eat a ripe banana when you are tired, you'll realise the truth of this, for you'll be completely revived in a few minutes.
In fact, bananas contain, in addition to this glucose, the valuable vitamins A, B and C, as well as phosphorus, calcium, copper and iron, which, you must admit, is a great deal to find in such a simple looking fruit.
So next time you look at a banana you should feel a certain respect for it, since it is capable of providing you and your family with such a cheap and complete aid to better health.

It Has a History.

But when you realise the wonderful possibilities of the banana, don't run away with the idea that you are one of the first people to discover it.
The army of Alexander the Great ate up most of the bananas in India as far back as 327 B.C.—and, as you know, that was a pretty healthy and successful army.

40,000,000

An since then bananas have proved themselves such a valuable food that they have been planted by grateful eaters in Jamaica, the Canary Islands and the countries round the Caribbean Sea—far from their natural Southern Asia.
But after this travelling, they arrived in England only about thirty-six years ago—and now one firm alone imports more than 40,000,000 bananas every week into this country.
Which only goes to show that Britons know a good thing, even if it takes them a long time to see it.

Good for All.

Another grand point about the banana—it is good for every member of your family.
It is good for baby if you mash a really ripe banana through a sieve, then mix it up with milk with an egg beater.
It is good for your school-going son and daughter, and if you give it to them with milk it will make a perfectly balanced meal. It is good for your husband and you because it gives you such readily absorbed energy.

And the same reason makes it specially good for anyone with a weak digestion. So you see, one way and another, everyone, everywhere, ought to be eating more and more bananas every day for the sake of health and happiness.

And, of course, the banana reaches you absolutely free from germs and insects because its thick skin is such a complete protection.

There are 101 Recipes.

And there's no need to bore yourself and your family by just putting plain, fresh bananas on the table every day.

There are at least a hundred and one different ways of cooking them—all equally delicious and very nutritious.

For breakfast, for instance, bananas are very appetising fried with bacon, served with parched eggs, or made into savoury fritters.

For lunch, there are dozens of different salads you can make with bananas as the main ingredient.

Sandwiches and Cakes.

And as a pudding, of course, is one of the favourite ways of serving bananas.

You can make all kinds of delicious sandwiches and cakes with bananas, too, and, do you know, you can make banana cheese, banana chutney, banana toddy, banana vinegar, and banana sauce?

And you can serve bananas as a vegetable and as a stuffing for roast turkey, etc !

The banana certainly lives up to its botanical name, which when translated, means **"Food of the Wise."**

Here is one delicious sweet:—

Banana Fool.

Boil one pint of milk with two ounces of loaf sugar and a small vanilla pod.

Beat up three eggs in a basin and stir in the milk.

Return this to the saucepan and stir with a wooden spoon until the mixture becomes a thick cream. But see that it does not boil.

Now strain into a basin and add the pulp of four or five bananas previously mixed with half a pint of custard. Serve cold.

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BREAD—OLD AND NEW.

How many thousand years the grain of the wheat has been used by mankind for food we do not know. From the earliest times, the hard grain was ground by hand between two stones in small quantities as it was needed. Gradually this laborious hand grinding was replaced by simple machinery employing stone rollers worked at first by slave or animal labour, later by wind or water power, and quite recently by steam. From all these methods the product was the same; the whole grain was torn to pieces to make wholemeal flour. All wheaten bread was made from this wholemeal flour, and it was a first-class food.

White Bread.

Compared with wholemeal bread, white bread is a thing of yesterday. It dates from only seventy years back, when steel rollers were first introduced in the flour mills in America These steel rollers produced a very fine white flour, from which the wheat embryo and the bran were sifted out. White flour can be kept for much longer than wholemeal flour, and this is a great convenience for commerce. Unfortunately, the valuable vitamins in the wheat grain are all in the parts of the grain sifted out. As their existence was unknown, no one knew of their absence.

The bread which has formed such a large part of our food was seriously altered in quality; it was still a nourishing food, but it was no longer a health-giving food. Those who lived largely on bread, either from necessity or choice, suffered from a partial want of vitamins. One consequence of this was the growth of an enormous trade in aperients of all sorts—a trade which is still flourishing.

Wholemeal Bread.

Lately there has been a revival in the use of wholemeal bread. This revival has been the result of many years' work by medical men and health reformers. Yet it does not seem to be realised that wholemeal bread is no new thing, but the good bread on which men have lived for scores of centuries; and the white bread, to which we have become so accustomed, is really a comparatively new thing, which after a short seventy years has been completely discredited as a basic diet.

The Newest Bread.

There are some people who do not like wholemeal bread, though there are only a very few with whom it does not agree. For them there is an alternative in a new sort of bread, which is very palatable. This bread is made of white flour with the addition of a fixed proportion of separately ground wheat embryo. It contains the valuable vitamins of the wheat grain in even larger proportion than does wholemeal bread, and this is an advantage, for in many kinds of foods besides bread there is a deficiency in these vitamins. Cerevite bread, as it is called, is being largely consumed locally

Most trades are intensely conservative, and it is only natural that many millers and bakers are opposed to wholemeal and cerevite breads. This matters little, for the trade will supply what their customers want, and the enterprising tradesmen will reap the profit.

—*Queensland Agricultural Journal.*

Instructor McLaren of this Society, has sent us a short article on Gungo Peas. He works in one of the dry areas of the Island in which this crop does well and is so quite able to tell us something about it. This variety is also known as "Pigeon Peas" and is, when properly dried and cleaned, one of the best "Keepers" of all the peas we produce.

The article is set out below and should interest growers of the crop.

GUNGO PEA (Cajanus indicus.)

The section of parish St. Thomas in which lie the districts of Yallahs, Easington, Llandewey, Ramble, Bushy Park, Windsor Forest, River Head, Wilson Gap, Richmond Vale, Goat Ridge, Manheim, Hagley Gap, Epping Farm, and Carrick Hill, known as SAINT DAVID'S, or the LOWER YALLAHS VALLEY, is the dry area largely given over to the cultivation of catch crops, chief of which are Gungo Peas, Beans, Cassava, Sweet Potato, Melons, Pumpkin, &c. The one grown by every body who cultivates is the Gungo Pea. So far as known to me, from point of output, this is the largest gungo pea producing area at present in the Island.

The climate,—dry and of low rainfall, as well as soil types ranging from sand to clay loams, seem specially suited to the growing of the crop. All plantings done between the third week in December to the end of August following (the month of May excepted) seem never complete unless the gungo peas occupy a fair portion of the land cleared. Growers will set out this crop on every type of soil, save marl, and in every situation save cold valleys and shaded sites (which result in what is known as 'wintering'). Where the site of the field lies exposed to the winds in winter,—a ruinous condition to a field in blossom, or in crop,—the planting is done pretty closely to prevent the destruction always feared.

The crop matures between December and May following, during which time there may be as many as three pickings from the same tree,—the first being the heaviest. A tree may live for many years, but growers in this district never allow it to ratoon for more than two seasons. The trees are then cut down and the field cleared for the planting of the same crop again. These plantings done between the months of December and April following produce a very heavy crop in the first year, but for a heavy second year crop, growers prefer to plant from June to August as the bush develops into very large trees. The greatest error in the practice of cultivation is the planting of the trees too closely together and setting out too many seeds to form the clump. Two, or at the most three, seeds planted from 5 to 6ft. apart give excellent result where the field is not in a windy situation,—trees develop to a much greater size—do not grow up too tall, and seem to revel more in the sunlight which gungo peas require for a good crop.

The rainfall in this region averages annually between 40 and 50 inches, sufficient for the needs of the crop. When the period between end of January and March is showery, the second and third pickings are good, the life of the trees lengthened, and the output for that year larger.

As to varieties and 'breeds' their numbers are legion. One on comparing the several 'breeds' will find that the same pea goes by a different name in different districts. The outstanding ones are those known by the names Porus, Bend Down, John Weise, Marrow Fat, Tamarind or Minto, and the No-eyed peas, the last named being the finest of the lot, but most delicate and requires to be planted in a

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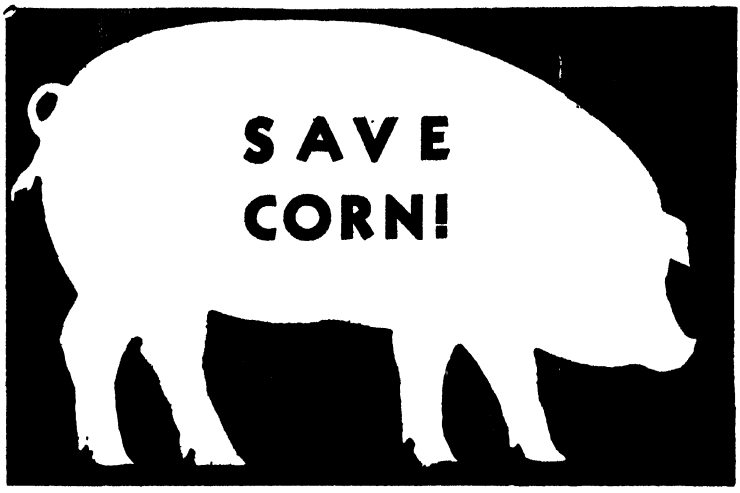
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EWAN D. MACDOUGALL, 20 Church St., Kingston.

situation free of shade, well exposed to the rising sun, and generally affected by the Lacewing insect. It is interesting to state that the No-eyed peas when cooked in rice or for soup only imparts its flavour, but does not colour the food as seeds of other breeds do. It is a late pea, unlike the Porus, which is the earliest maturing breed and the one planted as "Races Gungo."

Planting might be done as late down as October to produce a crop in the Spring following; but the crop from an October planting is always so small and uncertain that comparatively few persons will plant in this month. The price of peas in December is always the highest, so that those who gather their crops in the later months hold over till May to June when the price again rises, but not later than September when the markets are plentifully supplied with Black-eye and Cow peas. The No-eyed variety never sells for less than a sixpence per quart.

To the people in some of these districts, the gungo peas to them is what coffee stands for to the farmers of that crop in the uplands,—the dependence on it is for money to pay the taxes and clear off the heavy Xmas liabilities.

U. A. McLaren.

THE MOST INDEPENDENT MAN.

The most independent man, in any country, is the farmer who owns his own farm. To walk over his own acres gives him a strengthening feeling of independence.

He can produce most of his own food. He can always find a buyer for any product he does not need.

During a year he may not have much cash. But he has a dividend security and independence such as few people in town possess.

He can have much more cash, if he studies business methods.

His success depends much more upon himself than it does upon the weather.

You may have noticed that when a man makes a fortune in a town, one of the first things he buys with his money is a country house with plenty of land.

There is nothing else that a man can buy, in my opinion, that gives him such a feeling of strength and independence as LAND.

As soon as a man gets a little back garden, even, he becomes a higher-grade man. He has a little land of his own and it almost makes a chemical change in him.

—*Efficiency Magazine.*

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GAME BIRDS IN YOUR BACK YARD.

(By Harry E. Heinkel.)

(Specially contributed by the Author to the Journal of the J.A.S.)

Breast of pheasant for dinner! What an appetite-creating thought. And yet it is possible for any one, with a reasonable amount of space in his back yard, to keep and propagate game birds. This choice, delectable delicacy is within the reach of any one who wishes to devote a little time and trouble to the rearing of game birds. And it is not such a difficult task as one is apt to think it to be.

The keeping and rearing of game birds has passed the experimental stage, and as a result many commercial game bird farms exist throughout the country. But, then many keep and raise game birds merely as a hobby and to enjoy having a small number of them, or a variety of them, in their back yard.

Pheasants, however, are not the only game birds which can be kept and reared in the back yard. There are many other varieties of game birds as well as the ornamental and exotic groups. If one has the space and inclination one may run the entire gamut of pheasants, partridge, grouse, quail, wild turkey, water-fowl, peafowl, and guineafowl. All of these can be kept and reared in captivity.

To describe all of the birds in the various groups would involve more space than can be allotted to that subject in a short article. However, in order that those interested may gain some idea of the extent of these groups a number of the birds are named.

In the pheasant group we find the Ring Neck, Mongolian, Versicolour, Soemmering's, Reeves, Bohemian, Silver, Golden Amherst, Swinhoe, Elliott, Impeyan, Peacock and Argus. Of all of these possibly the most common is the Ring Neck. The greatest charm of the pheasant is the beautiful plumage of the male bird.

In the partridge group we have the Hungarian and Chukar. The latter is very popular at the present time.

There are a number of varieties in the quail group, but possibly the most popular is the California Quail—The Plumed Knight of the Chapparel.

The Northern variety of Wild Turkey is most often kept by the game bird breeder.

The list of water fowl is a long one. It includes the swans, geese and ducks. Excluding the beauty of the swans, possibly the most colorful in the water-fowl group is the woodduck

Most every one is familiar with the peafowl and has marvelled at the beauty of the peacock's tail. The Blue, Green, Black and White are best known in this group.

Guineafowl are best known, and disliked by some, for the noise they make. Young guineahen is a toothsome morsel. There are five species in this group commonly kept. They are:—the Pearl, White Lavender, Silver Wing and Royal Purple.

The above list must not be construed as being complete. Many additional species are contained in the various groups.

As is necessary in the keeping and rearing of any animal or bird life, absolute cleanliness must be a habit, good, wholesome feed should be used, and study and care must be applied.

Types of pens, in construction and material, differ according to kinds of birds kept, locality, and whims of the keepers. This also holds true in kind of feed used and manner of feeding. All, however, agree in using either bantam hens or incubators in hatching. Pheasants especially are very poor mothers, and this is true of many other

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varieties of game birds. The prospective game keeper will learn much by visiting successful game breeders or by writing to those from whom he is contemplating of purchasing his breeding stock.

The keeping and rearing of game birds has made a healthy and substantial growth within the past few years. While it is still a hobby with many it has grown to a profitable industry with others. As a hobby it is both fascinating and interesting and limited only by the space one can allot to the number and variety of birds one wishes to keep. As an industry it is limited only by the desire and ambition of the keeper to make it a profitable commercial venture.

In the United States, and especially in California, game birds are propagated annually by the many thousands for table use, game preserves, and as breeding stock. In price it has been reduced so that it is within the reach of most any one for table use or as breeding stock.

Much has been accomplished by game bird breeders' associations in acquainting the general public with the excellent merits of the game bird It must be remembered that many have neither the time nor inclination to hunt for these birds in their natural habitat with gun and dog, and so the bird breeders supply the wants of those who enjoy the bird if it were not necesssary for them to hunt and shoot the bird.

Possibly one of the world's greatest organization of game bird breeders' association is the California Game Bird Breeders' Association with Offices at 783 North Catalina Avenue, Pasadena, California. This is a Co-operative Association of game bird breeders which has done much to promote the Game Bird Industry, and it has shipped breeding stock to all parts of the United States as well as exported them to other countries. Here the prospective game bird keeper can obtain information regarding the keeping and rearing of all game, exotic and ornamental birds.

Information is of value only in so far as its source is dependable. Consequently, the prospective game bird breeder should give serious thought to the methods suggested to him in the keeping and rearing of game birds. Conditions and circumstances will often suggest methods, and the experiences of others are always of value. Therefore, the information secured through the medium of organizations, where the combined knowledge and experience of a large number of breeders is available, or through Government sources, such information can be deemed of greater value than that obtained from the individual breeder.

While I do not wish to convey the impression that the keeping and rearing of game birds is difficult, it should not be believed to be as simple as maintaining the barnyard flock of chickens. Success in any venture depends upon the efforts one puts into it, and the keeping of game birds is no exception.

The pride of the father over his first-born is small indeed in comparison with him who has succeeded in raising his first setting of pheasants or quail or partridge. And it is questionable as to who is more attentive to the young birds—the hen or the man. My guess is the man, and I don't think I'm wrong. At any rate the man does the loudest and most cackling.

If you would enjoy the acme of hobbies; if you wish to adorn your back yard with the most colorful of living things; if you would feast as did the kings and nobles of old, my suggestion is:—Keep and rear game birds in your back yard.

JAMAICA SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS.

THE ST. ANN BRANCH, ANNUAL REPORT, 1936-1937.

In presenting this, the Third Annual Report, the Chairman and members of the Executive Committee wish to draw attention to the increasing support and co-operation through which they are enabled to carry out the aims and objects of the Branch; these being to promote a deeper interest in animal husbandry from a humane, social and economic point of view and to protect animals from cruelty and neglect. There have been numerous instances of these general principles of kindness attracting spontaneous help, as may be seen from the list of gifts and services acknowledged.

The free Veterinary service has proved helpful to stock-owners of all classes, but chiefly to the poor people. During the year, Mr. L. T. McDonnough, the Veterinary Dispenser, has visited all the markets and most of the villages, in rotation, teaching and advising people as to the requirements and care of animals, performing operations and carrying out treatments. While so engaged he has had unique opportunities for observing agricultural conditions in the parish.

Dr. Delfosse has kindly undertaken to instruct him as to the treatment of Farcy, a prevalent disease, which takes toll of a large number of maned stock each year. In this connection reference may be made to the late Miss Aleen Cust, M.R.C.V.S. who came out to Jamaica early in the year, prepared to give to this Branch her time and services with a view to finding a complete cure for Farcy, and with the experience gained during extensive laboratory research work in France, her knowledge and help would have been of great value. Her sudden death, while carrying out her work of mercy for animals, is deeply regretted, and at the Annual General Meeting of the Parent Society in Kingston, the St. Ann Branch was associated with a message of condolence sent to Miss Cust's relatives. Mr. and Mrs. Anderson Cocks attended the funeral at Halfway Tree and placed flowers on the grave on behalf of this Branch, to the veterinary work of which Miss Cust had given so much help.

Largely due to the procrastination of several people concerned, the work on Cave Valley Tank and Trough was delayed and not completed until July when Mr. Henriques, who had kindly undertaken to supervise the casting of the Trough, and the Hon. Secretary were away. On completion the work was found to be unsatisfactory in several ways and it was decided to ask a qualified engineer to examine the construction. His report is now under consideration and arrangements are being made for the necessary alterations to be carried out.

The Branch is fortunate in its happy working relations with the Jamaica Agricultural Society, the office staff giving help whenever approached, and the St. Ann Instructors rendering veterinary aid and giving help whenever approached and the St. Ann Instructors rendering veterinary aid and giving valuable teaching on the proper care of livestock. The Inspector of Plant Diseases also is equipped with Veterinary First Aid, and attends to any sick or injured animals he may meet with in the course of his duties.

At the Rest Field in Brown's Town, guinea grass is established so that for the most part the feeding problem is solved. The Sergeant of Police reports that the Field supplies a long felt need for the safe accommodation of animals seized, or detained by the Magistrates and Police.

Negotiations for the purchase of a piece of land on which to erect a trough at Bensonton have failed, the owner of the land being unable to produce a satisfactory Title. It is hoped a new site will be selected shortly.

During her leave in England, the Hon. Secretary had two interviews with Capt. McCann, the Chief Secretary of the R.S.P.C.A., and received kind assurances of his continued interest in this work of preventing cruelty to animals.

During the 18 years that the Hon. Secretary has been working in Jamaica, she has never appealed in vain to the R.S.P.C.A. for help, either by advice or in kind, and appreciation of this assistance is accordingly expressed on behalf of the members.

In order to promote a higher regard for animal life in Jamaica, the Council of the R.S.P.C.A. have consented to award their Silver Medal and Certificate in cases where it can be proved that animals have been saved from danger at personal risk. It is hoped that anyone witnessing such acts of bravery will forward all particulars to this Society for transmission to London.

With a view to obtaining further help towards the provision of water troughs, the Hon. Secretary approached the Metropolitan Drinking Fountain and Cattle Trough Association in London, and in addition to a gift of 14 dog's drinking troughs, the Committee granted £30 for the provision of additional horse troughs in St. Ann. It has been decided to erect one at Dry Harbour and Mr. Harry Stephenson has kindly promised to give a piece of land for the purpose.

At the invitation of the Wolverhampton Town Council, the Hon. Secretary visited their Abattoir and was able to see the modern methods of slaughter carried out without pain or distress to the animal, the plant for the utilisation of all the by-products, and obtained facts and figures of the economic running of a factory Abattoir.

Miss Ogilvy Dalgleish, through those generosity the veterinary work of this Branch was extended, keeps in touch with our work and promises further help in the future.

The Parent Society adopted new rules in December and provision is made for one representative from each Branch to be elected to the Central Council. Mr. Anderson Cocks represents this Branch which is the only active one at present.

The Committee acknowledges with gratitude the help given during the past year by the Parochial Board of St. Ann, and by the Inspector and members of the Police Force; and before closing this Report, they wish to express their profound thanks to all those persons who have in any way helped to protect animals from suffering and cruelty.

(Signed) :—

T. L. ROXBURGH, Chairman.
C. OWEN COVER, Vice-Chairman.
G. M. ANDERSON COCKS, Hon. Secretary and Treasurer.

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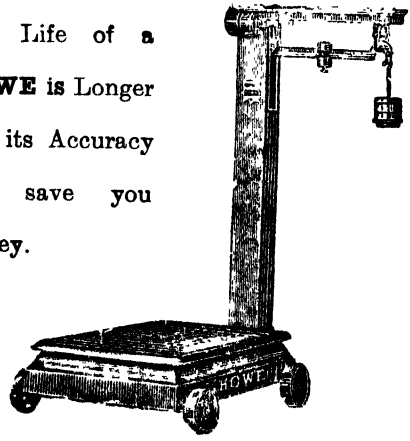
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We invite the attention of those whose interests in Cocoa have not entirely disappeared to the following notice of two recent publications which have been prepared and published by the Imperial College of Tropical Agriculture, Trinidad

As the recent rise in prices confirms the oft-repeated opinion that this crop should not be neglected—the publications should prove of value.

EFFICIENT PRODUCTION OF CACAO.

The researches of Mr C. Y. Shephard, Carnegie Professor of Economics at the Imperial College of Tropical Agriculture, into the economic aspects of the Trinidad cacao industry are now available in the form of two publications which should make a wide appeal to those interested in this plantation crop. In the first of these publications the records of a large number of estates are submitted and have been examined with the object of ascertaining the profitable and unprofitable factors associated with cacao production. It not only includes a careful analysis of every item of expenditure incurred on estates but also draws striking comparisons between the figures obtained on some of the "best" and "worst" estates in Trinidad. From these data a planter or owner of cacao properties should be in a position to judge whether his results compare favourably or not with those of others. Generally speaking, the most profitable estates obtained high yields, spent less than the average on cultivation, were about 300 acres in size, consist of youthful fields, purchased no manures and in most cases specialised almost entirely on the production of cacao. Professor Shephard, however, reveals the weakness of the orthodox economic survey by pointing out that the relationship between some of these factors and costs of production is not that of cause and effect, and the analyses are therefore dangerous bases for recommendations. He proceeds therefore in the second publication to develop a comprehensive technique of his own in which the findings of scientific specialists, the experiences of individual planters and the results of orthodox economic analyses are integrated so that the fundamental causes of profit and loss in the cacao industry are seen in true economic perspective. By this new method of approach the author renders a signal service to producers of cacao, whether situated in the West Indies or West Africa and makes an important contribution to methods of agricultural economic research. The technique is applicable, with suitable modifications, to many other tropical products. In the concluding portions of this second publication recommendations are made for improving the efficiency of cacao estates and much useful information is given on the more modern aspects of cacao production.

Both publications may be obtained on application to the Editor, "Tropical Agriculture", Imperial College of Tropical Agriculture, Trinidad, B.W.I.

*I. The Cacao Industry of Trinidad. Some Economic Aspects. Series II. A Financial Survey of Estates during the Seven Years 1923-24 to 1929-30. Pp. 30+2 Appendices+9 Tables+2 Maps+43 Figs. (Reprinted from "*Tropical Agriculture*" Vols. XIII, II and 12 and XIV, 1-5). Price 3/- post free.

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We reproduce below, advice on the Candying of Fruit by Mr. H. H. Orchard (could any name be more appropriate?) (District Horticultural Adviser) in the Journal of Agriculture of South Australia and while the fruit referred to are not identical with ours, the advice should be read with interest by many of our housewives who would be encouraged to go in for preparing some of our fruit as set out.

CANDYING FRUITS.

Asked by the McLaren Flat Branch of the Agricultural Bureau for instructions for candying fruits, Mr. H. H. Orchard (District Horticultural Adviser) says:—

The chief art in candying and crystallising fruit is to see that the syrup is brought to the proper consistency. In two or three minutes a syrup over a fire passes from one degree to another. Of these degrees there are seven, but it is on these degrees that the whole success of candying turns.

The first degree is the lisse or thread, and as this is the one that we are mostly concerned with, the process is explained. Take a pound of the best loaf sugar and put it in a vessel. Over this pour ½ pint of spring water. Boil it in a brass or copper pan over a sharp fire, removing all scum as it rises to the surface. Test it by dipping the forefinger of the right hand first into cold water and then into the boiling sugar. Dip it back at once into cold water to prevent the finger being burnt, but immediately withdraw it from the water before the sugar has time to drop off. Pinch the sugar between the finger and thumb, and on slightly separating, a thread is formed, which, after being pulled to a certain length, will snap. This then, is the first degree of syrup, or the thread.

To Candy.—Greengages, apricots, plums and cherries are delicious when successfully prepared in this manner, but it is a long business, and requires great care. Split the fruits and remove the stones. Lay the fruits carefully into the prepared syrup, and boil them slowly until they become clear. Remove any scum that arises. Lift the fruits out one by one with a skimmer, and lay on flat dishes in a perfectly dry place. Cover over for 24 hours. Have the syrup again ready. It should now have been cooked to its second degree or pearl. This is then tested in the same manner. If found that on drawing out to a thread it snaps quickly, and also that when boiling the sugar presents the form of large pearls or globules on the surface, it will have reached the pearl stage. Into this lay the fruit as before, and boil gently until quite tender. Put on a flat dish again and leave for another 24 hours. The fruit is again laid in the syrup and boiled for another few minutes. Have ready some of the best castor sugar and sift it over the fruit on all sides until quite white. Lay the fruit on the shallow end of a clean and perfectly dry sieve (wire trays are excellent for this purpose), and place the sieves or trays in a moderately warm oven. The oven must not be allowed to get cold until all the fruit is quite dry. Watch the fruit carefully, and turn over two or three times. When dry, it is finished. All fruit thus preserved should be kept in a dry place.

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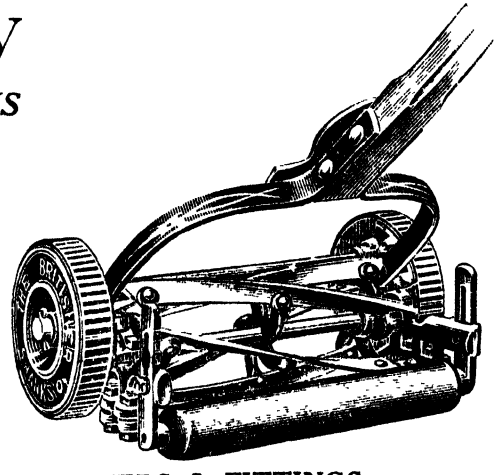
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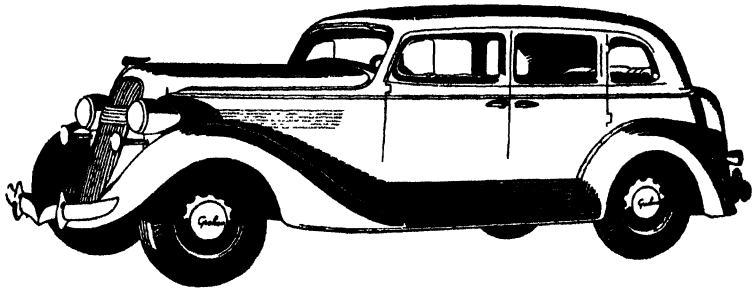
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THE FUNGICIDAL TREATMENT OF SEED POTATOES.

Seed potatoes showing the presence of either common scab or black scurf should be treated with a fungicide before planting, otherwise, given the necessary weather conditions, considerable damage may be done by one or both of these diseases to the resulting crop. Two methods are available for the purpose. One employs hot formalin solution and the other acid corrosive sublimate. The latter is more convenient, as no heat is required The potatoes should be washed but not cut before treating

Prepare the formalin solution by mixing 1 pint of commercial formalin (40 per cent. formaldehyde) with 15 gallons of water. Heat to 125 deg. Fahr. and arrange for maintaining the temperature at this point by building a small fire under the tank or by keeping some of the solution hot in a boiler so that a little of this may be added from time to time as the rest cools. No more than a 5 deg. variation in temperature either way during the operation should be allowed. Dip the seed tubers into the solution for two and a-half minutes in successive small quantities in crates or upon sacks Remove, and after draining excess solution back into the tank, cover the potatoes with bags or canvas for one hour to keep in the formalin fumes Finally spread out to dry before planting.

The acid corrosive sublimate solution is prepared by adding ¼ lb of corrosive sublimate and 1¾ lb. of hydrochloric acid (spirits of salts) to 12½ gallons of water. A wooden or well-painted vessel must be used, as this mixture corrodes metal When all the corrosive sublimate has dissolved immerse the tubers (in lots of convenient size) for five minutes, and then spread out to dry. The dipping is preferably carried out in wooden crates rather than bags. The solution loses its strength gradually, so that a fresh quantity should be made up after ten successive lots have been treated.

Acid corrosive sublimate must be used on dormant tubers and not on ones which have sprouted, otherwise some injury or delay in germination may occur Treatment may be carried out three or four months before planting. Corrosive sublimate is a deadly poison and must be used with care. All treated tubers must be planted or buried to avoid the possibility of their being consumed by any person or domestic animal. The solution may cause some irritation to the hands unless they are greased well before immersion.

These treatments are only effective if the soil on which the crop is grown is free from the parasitic fungi causing the diseases. It is of little use treating seed to be planted in land which has borne a badly diseased crop of potatoes within recent years.—J H. Simmonds, M.Sc. Senior Pathologist.

STREAK DISEASE IN SOUTH AFRICA.

Streak is the major disease of Uba cane in South Africa and no effective control is possible as long as this variety remains the principal one under cultivation. Out of 556 fields scattered over the whole country inspected, not one contained Uba that was entirely free from the disease. The degree of infection ranged from 2 to 100 per cent., the average being estimated at 60 per cent., which is a very large increase over what ascertained ten years ago.

The disease is due to a virus carried by the maize leaf-hopper Cicadulina mbila, and is spread wherever diseased stalks are planted.

The damage in 1934-35 is estimated at 241,000 tons of cane, valued at £170,864. The only hope of arresting this plague is to supplant Uba by other varieties, of which eight have been released: C.H. 64/21, Co. 290, P.O.J. 2725, 2714, 2727, and 2878, and Co. 281. The first of these is very susceptible, the second is resistant, and the others are very resistant. No precise information is at hand regarding Co. 301, the eighth released variety. Although Co. 290 is capable of being infected, the disease spreads slowly in this variety and in P.O.J. 2725, and 2878. There is no record of infection in Co. 281, P.O.J. 2727, or P.O.J. 2714.—A. P. D: McClean and R. H. Halse, in Proc. So. Afr. Sugar Technologists' Assoc., Vol. 10 (1936), pp. 107-117.

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THE WATER SUPPLY FOR THE DAIRY HERD.

The water supply on many dairy farms is too often a limiting factor in milk production. An abundance of pure, fresh water, is essential for the best results. While not spoken of as a food, it is absolutely necessary for all the processes of nutrition. It is a well-known fact that mastication, digestion, absorption, and assimilation are all impeded by a lack of water. No food can be utilised by the body until it has been brought into solution, and as water is the chief agent in accomplishing this, it will be seen that a good, pure water supply is essential at all times. It is the common carrier of the body, both in the distribution of the nutrients and in the elimination of waste and the various poisonous products through the skin, kidneys, and the digestive tract. Through evaporation from the surface of the body and the lungs it regulates the body temperature. It is, of course, well known that the largest constituent of milk is water, of which it forms about 87 per cent. A shortage of water will cut down a cow's milk flow more quickly than a shortage of feed. The dairyman, in order to maintain a maximum flow of milk, must, in addition to good feeding, provide an ample water supply, as each cow on an average consumes about 12 gallons daily. The quantity consumed depends very largely on the temperature and the milk flow. Cows in milk require three or four times as much water as dry cows. Drinking does not produce milk, but heavy milk production and the heavy eating that results from it induces the consumption of a great quantity of water.—L. VERNEY, Instructor in Dairying.

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SHELTER FOR PIGS.

Protection from the extremes of weather is essential for the health and economical growth of pigs. During hot weather it is obvious to the observant pig raiser that pigs require cool shade and they even enjoy a bath in a wallow or muddy pool. A number of pigs die each summer from headstroke, which affects the fatter pigs and those which are deprived of cool shelter.

Whilst the wallow is a means of cooling pigs, it is a probable source of infection unless it is well constructed of concrete and capable of being emptied and cleaned frequently. The wallow should also be covered with a roof or a tree to protect pigs from the sun while bathing.

Cool shade can be provided for pigs by the ordinary shelter sheds as recommended in the department's bulletin on pig accommodation, provided the sheds are constructed with the roof not less than 6 feet from the floor at the lowest part, and provided there is a ventilation space of at least 6 inches between the top and the walls and the roof. The front should be at least partly open and the shed faced to the north-east; this latter provision allows the direct sunrays to enter the shed in the early morning, acting as a disinfectant, then, as the temperature increases later in the day and the pigs require shade, the sunrays are on the northern and western walls of the shed, thus leaving the interior shady for the pigs.

A supply of clean, cool drinking water will also help to keep pigs comfortable in hot weather.

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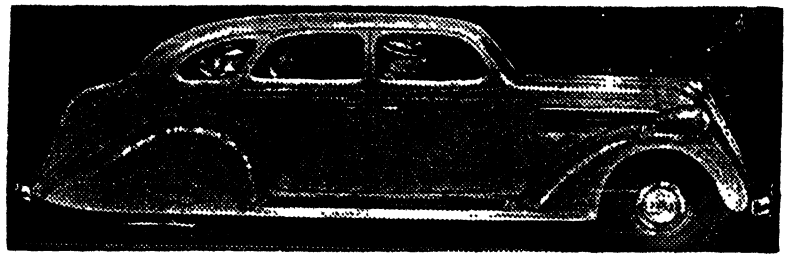
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STRAWBERRY CULTURE.

(By W. R. PARMENTER, Williamstown Branch.)

Agricultural Bureau of South Australia.

The best soil in which to grow strawberries is a good loam with a clay or slate subsoil, although they will grow on almost any class of soil. In South Australia the strawberry is chiefly grown in the Mount Lofty Ranges, where a good rainfall is generally obtained, but they will also do very well in the drier districts. Where a rainfall from 16in. upwards is to be obtained, strawberries can be successfully grown, provided that the proper attention is given. The best way to grow them is to get good well-rooted runners, and these can be set out in rows, beds, or in hills. To plant in rows, the plants are set from 12 to 18in. apart in the row, and the rows 24 to 30in. apart. Any runners forming between the plants are allowed to remain, whilst any that form between the rows are kept cut off this will eventually form a matted row of plants. To plant in beds, the rows are set a little closer and all runners allowed to remain, eventually forming a matted bed of plants. To plant in hills, plant the same as for rows, but all runners are kept cut off, and the original plant will branch out into a number of crowns, from which they will flower and fruit in great numbers. To plant the runners, only the roots should be put in the soil, and not the corm from which the crowns form. The strawberry has a peculiarity in its flowers, and can be placed in three groups, namely, Pistillate, Staminate and Hermaphrodites. In the Pistillate group the flowers are so defective in their stamens that they need the fertilising influence of another variety planted near them to ensure the crop setting. In the Staminates group, the flowers are often so defective in their pistils that a great precentage fall off or fail to set fruit. This is more often the case when these varieties are grown in beds, and the runners allowed to stay on, but they are usually very productive if grown in hills. In the Hermaphrodite group the two sexes are so evenly combined that almost every flower sets perfect fruit, but only a few varieties belong to this group. The best time to plant out strawberries is from May to July, when the runners have attained a suitable size. However, the earlier the plants are set out the better, because they can then produce sufficient growth before they fruit to carry a crop of good berries. Should the plants not be growing sufficient foliage, all flowers that form by the end of August should be picked off. This will help the plant to grow foliage, and the flowers will grow later. Some gardeners make the mistake of manuring too heavily. This only tends to grow foliage and very little fruit sets, the plants usually growing all runners and no fruit. The best method of manuring is to dig in plenty of green manure in the winter, and give a dressing of super and bone dust (2 cwts. to the acre), and when the fruit has set give a dressing of sulphate of ammonia (1 cwt. per acre). A good plan is to mulch the plants in the winter with old stable manure, straw or sawdust; when the rains come, the manure will be carried into the soil as liquid manure.

Some gardeners make a mistake by watering their strawberries and by stopping the watering when the crop has finished. Strawberries can be successfully grown without the aid of irrigation in any district where a rainfall of 25 in. or more is obtained. It is only in the drier districts where irrigation, either by the use of sprinklers or by flooding the ground, should be used.

The strawberry is only a shallow-rooted plant, and produces a number of surface roots to feed the moisture required by the plant; should irrigation be applied, the plant must produce more surface roots to help feed the extra moisture into the plant. Should the irrigation be discontinued in the drier months of the year, the plant cannot find enough moisture to carry the increase in roots and foliage and it generally deteriorates or dies. Some of the chief causes of failure with strawberries are the numerous pests and diseases that occur at different times. Insects and grubs are more destructive than any disease that has yet appeared in a strawberry garden The Green Fly, or Aphis, as it is generally known, often attacks the roots of the plants, particularly when the soil is loose so as to admit them readily to the roots. The snail and the slug are also destructive and destroy fruit in large quantities. The Rutherglen Bug is also a destructive pest, as it sucks the juice from the berries, making them useless for market.

Strawberry Leaf Spot is a fungus disease to be found in almost every garden. It causes numerous brown spots to appear on the leaves of the plants. Mildew is a disease to be found in the wetter districts, or where irrigation is used. The reason why it is better to plant good strong runners is that should the old bushes have a disease, it will not be spread by using strong, healthy runners. Some growers split up their old plants when replanting, using a piece containing good roots and a crown for fruit. Strawberries properly cared for will bear for a number of years, but it is advisable to try and keep only young plants, or re-plant every three years. When planting, for market purposes, it is advisable to plant every year, and at the end of three years dig up a bed and re-plant again. There are a great number of varieties to choose from, but the ones usually grown are Melba, Hackett's Giant, Gandy, Ettersburg 89, Rhodes Special and Royal Sovereign.

The strawberry begins to ripen at the end of September, and will continue to bear until December. Should conditions be suitable, such as if sufficient moisture can be obtained during the summer, a second and often a third crop can be gathered. This is more often noticed where the strawberry is grown with the aid of irrigation, and if irrigation can be used without too much expense attached to it, I would advise its use only for this purpose.

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BRANCH NOTES.

All Reports received are acknowledged in this section of the Journal. This month we have only been able to put in print Notes from Branches who have not yet had a publication this year.

Branch Secretaries should write on one side of the paper only.

[Ed.

CLARENDON : Victoria Town.—Meeting held 18th May. Present : Rev. J. W. Grant, in the Chair, six members, the Secretary and Assistant Secretary. After prayer by the Chairman, minutes of the last meeting were read and confirmed. Arising therefrom, the Secretary reported fees not yet paid in to Parent Society, but will be done in time for next meeting. The President informed the meeting that the Parochial Board had long ago consented for school children to get water from the public tank. This being so, the resolution moved on the matter at the last meeting need not be sent in. The question arose as to how water would be brought to the school premises —therein lies the difficulty. The matter of the Branch obtaining a spray was mentioned by Mr. Walters, but not discussed as members present were few. The President expressed a wish that the Branch obtain the help of the Instructor in cultivating a special crop and finding a market for it. Cassava was mentioned as a suitable crop. Members expressed views on different crops : bananas, tomatoes, etc. The President distributed to members pumpkin seeds he had obtained from the Parent Society. The meeting terminated by singing the National Anthem.

L A. ALLEN,
Victoria Town P.O. Secretary.

HANOVER : Maryland, Mt. Hannah.—Annual Meeting held 20th May. Present : Mr. A Shaw Samuels, President, 11 other members and some visitors. The minutes of the last meeting were read and confirmed. Reports of the Secretary and Treasurer for the year under review were read and adopted. Correspondence followed. All Officers were re-elected. Twenty-five persons gave in their names as members. Delegates to the Half Yearly Meeting of the Hanover Branches Associated were appointed. It was decided that these delegates pay half of the travelling expenses to the said meeting, as the funds of the Society were low. The President gave his closing remarks and the meeting terminated with the National Anthem.

I. J. SAMUELS,
Maryland P.O. Secretary.

MANCHESTER Comfort Hall.—Meeting held 14.5.37. Present : Mr. D. D. Palmer, President, O. S. White, Secretary, and five members. The President called the meeting to order. Minutes of the last meeting were read and confirmed. Matters arising therefrom were discussed as follows : (a) Loan Bank; (b) Social; (c) Country Fires Law. Re Loan Bank, the President suggested that it was full time that the Comfort Hall Branch should have its own Loan Bank. Correspondence was dealt with. Letters from the Secretary M.B.A., Messrs. Geddes Grant re fertilizers, and Swiss Stores were read and replied to. Delegates were appointed to the M.B.A. meeting to be held at Grove Place on June 12. It was decided to send a resolution re gambling from this Branch to the Inspector of Police so that a stop be put to this evil. Five new members paid in their subscriptions. The meeting was brought to its close by singing of the National Anthem.

O. S WHITE,
Comfort Hall P.O. Secretary.

Bellefield.—Meeting held 7.5.37. Present were : Mr. D. D. Phillips, in the Chair; Mr. T. Hemans, Instructor Darby, and 16 members. The meeting commenced with prayer. The minutes of the last meeting were read and confirmed, and matters arising therefrom, and correspondence dealt with. It was agreed that this parish should take first advantage as vegetable growers and send up the list of names and acreage of land to be cultivated. The President informed the meeting that Mr. Bridge of the Low Temperature Station had promised to meet the people on a special day for further arrangements. The members were urged to start pineapple cultivation as there is a future for that Industry. It was also intimated that a Corn Industry will be started soon, and that the corn produced will be taken within the next three or four months. Mr. Phillips spoke of matters now before the Board of Management, chiefly the claiming by buyers of our produce, of 130 140 lbs. for the cwt. The matter was duly discussed, and it was decided that a resolution be sent to the Government to rule that 112 lbs. be the regular rate per cwt. Instructor Darby addressed the meeting, which closed with the singing of the National Anthem.

(Miss) M. J. MORGAN,
Williamsfield P.O. Secretary.

PORTLAND : Mahoe.—Annual Meeting held 20.5.37. Meeting was called to order by Mr. J. Boyd. There were present on the platform Mr. J. Boyd, Mr. W. Jackson, Mr. D. Jackson and the Secretary, Mr. J. O. Grant. Minutes of the previous Annual Meeting were read and confirmed. The Secretary was thanked for his good work during the past year. The reports of the Secretary and Treasurer were read. 24 new members were enrolled. Election of Officers resulted as follows : President, Mr. H. C. Dixon, Messrs. D. Jackson, 1st V.-P., J. Boyd, 2nd V.-P., Paul Benden, 3rd V.-P., Mrs. R. Grant, Treasurer, Mr. J. O. Grant, Secretary, and Mr. W. Jackson, Assistant Secretary. A.P.s reported several arrests. Mr. A. Jackson moved that a letter should be sent to the Honourable Member, congratulating him for his good work in and out out the Council, and asking him that as His Excellency is expecting to visit the western part of the parish, that the Mahoe District be included in his visit. At this stage the meeting adjourned by singing the National Anthem.

J. O. GRANT,
Bangor Ridge P.O. Secretary.

Claverty Cottage.—Meeting held 8th May. There were present : J. Barclay, 1st V.-P., in the Chair, 8 members and the Assistant Secretary, Mr. D. Moore. The minutes were read and confirmed. Matters arising therefrom were dealt with. The Country Fires Law was brought up and discussed. Subscriptions were paid to the Treasurer. Minor matters were dealt with, and the meeting brought to a close by singing the National Anthem.

D. MOORE,
Shibo P.O. Assistant Secretary.

Craigmill.—Annual Meeting held 4th May. Present : Messrs. L. T. Lawrence, President, H. S. Burke, 1st V.-President, A. A. Palmer, 2nd V.-President, Wm. Lowe, 3rd V.-President, A. T. Wilmot, Instructor, several visitors, two of whom became members, eight ordinary members, and the Secretary, Rev. T. Lawrence. The meeting was opened with prayer by the President, who welcomed the members and visitors. Subscription for the current year was taken, and the minutes of the last Annual Meeting were read and confirmed. Correspondence was read and discussed. The two A.P.s present had nothing to report. Their badges and handcuffs were in good condition. The Secretary's Report was presented and adopted. The Treasurer's Report was next presented and adopted. A vote of thanks was accorded the Secretary and Treasurer. The retiring President gave a short and practical address. Mr. J. T. Lowe was asked to preside during the election of President. This resulted in the re-election of Mr. L. T. Lawrence, who thanked the House and resumed his seat. The election of the other Officers resulted as follows : Messrs. S. B. Baugh, 1st V.-P., A. A. Palmer, 2nd V.-P. (re-elected), D. E. Baugh, 3rd V.-P., Rev. T. Lawrence, Treasurer and Secretary (re-elected), J. T. Lowe, Asst. Secretary. The following were named to serve on the Committee of Management, viz., Messrs. Arthur Lowe, H. S. Burke, S. A. Morris, E. J. Walker, Leonard Ellis, Joseph McFarlane and (Miss) Lucy Lowe, with the Officers of the Branch. The Instructor in his remarks stressed the necessity for interest in the Branch. He urged members to attend meetings more regularly. A vote of thanks was accorded the Instructor for his helpful remarks, and the meeting terminated after the marking of the roll with "The King."

(Rev.) T. LAWRENCE,
Buff Bay P.O. Secretary.

Portland Central.—Annual Meeting held 8th May. Present : Rev. J. E. Reid, President, 14 members and a number of visitors. As arising out of the minutes the following matters were dealt with : (a) Red Peas Industry. Two different samples were displayed, sent by the Parent Society. (b) Water Supply; (c) Rain Gauge; (d) Vaccination centre at Mt. Pleasant; (e) Resolution re the Cutting of Bananas on Sundays. A lovely recitation was rendered by Miss Harris. The Secretary's report was read and adopted. Election of Officers : The following officers were elected : President, Rev. J. E. Reid (re-elected); 1st V.-P., Mr. H. Nosworthy, J.P. (re-elected); 2nd V.-P., Mr. V. Z. Brown; 3rd V.-P., Mr. James Eubanks; Treasurer, Mr. J. D. Brown (re-elected); Secretary, Mr. A. F. Spence (re-elected); Assistant Secretary. Miss F. E. Thompson; Auditor, Mr. J. L. Hinds. Each officer expressed appreciatory remarks re his position, and promised to do everything possible which tends to the advancement of the Branch. Six new members were enrolled, after which Miss F. E. Thompson rendered a recitation. A.P.s reported "All Correct." The Secretary was advised to forward his name to the Parent Society. Communications were read and dealt with, and five delegates were appointed to attend the Half-Yearly meeting of the Portland Branches Associated to be held at Port Antonio on Saturday, 12th June. Minor matters were dealt with and after the President delivered his closing remarks, the singing of the National Anthem terminated a very lively and enjoyable meeting.

ABDULE F. SPENCE,
St. Margaret's Bay P.O. Secretary.

Breastworks.—Meeting held 14.5.37. Present: Mr. D. T. Buchanan, President, 20 other members, 2 visitors, and L. F. Ergas, Secretary. The President opened the meeting with prayers. He brought to the memory of the House, the fact of a very important and recent happening, the Coronation of Their Majestics King George VI and Queen Elizabeth, ordering that the House in love and extreme respect stand for one minute, which was loyally responded to. The minutes of the last meeting were read and confirmed. Correspondence: Letters from (1) Hon. H. E. Allan; (2) Messrs. T. Geddes Grant, Ltd., re Fertilizers; (3) Swiss Stores, advertising Cameras; (4) H. T. Williams, re price of pigs, were read. Our Instructor detailed matters concerning pigs. There was a balance by the Branch on a Tilly Lamp. It was decided that if voluntary subscriptions from members could not be got, then an entertainment could be thought of, for the purpose of raising the balance due. In accordance, the President directed that the Managing Committee take up the matter at an early meeting. The Instructor spoke on Fertilizers, informing the House that the J.A.S. sells fertilizers at 1½d. per lb. Small quantities are obtainable by post. The Authorized Person, although ill, sent in his report. There was a Social Night on the 9th April. The Secretary reported that with only 9 days for preparation, and the ready financial assistance of the members, the social night was carried through with the assistance of local talent. Dr. T. A. Campbell was Chairman. A programme of Recitations, Addresses and Songs, with music, was rendered. There were 230 persons present who were served with refreshments. This was received with loud applause by the House. The meeting closed with the National Anthem.

L. F. ERGAS,
Port Antonio P.O. Secretary.

ST. ANDREW: Content Gap.—Meeting held 15.5.37. Meeting opened with prayer. Present were: Messrs. J. W. Douglas, in the Chair, 6 other members and F. A. Wilson, Secretary. Minutes of the last meeting were read and confirmed. Matters arising therefrom were dealt with. It was reported that the public road leading from Gordon Town via Pleasant Hill was in bad condition. It was agreed that a letter be sent to the Director of Public Works re same. Water supply for the district was also discussed. This matter has been long pending. It was agreed that a letter be sent to the K.S.A.C. re same. The Election of Officers for the ensuing year resulted as follows: Mr. J. W. Douglas, President; Mr. Caleb Warner, 1st V.-P.; Mr. R. Hasse, 2nd V.-P.; Mr. N. Jackson, 3rd V.-P.; Mr. F. A. Wilson, Secretary, unopposed. Treasurer's account was audited and taken. He was also returned. Members were asked to pay in subscriptions at an early date. The meeting rose with "The King."

F. A. WILSON,
St. Peter's P.O. Secretary.

Westphalia.—Meeting held 29.5.37. Present Mr. M. Hall, in the Chair, 8 members and 2 visitors. Meeting began with prayer. The Chairman addressed the members present. The Secretary was called upon to give his report. Rules from the Parent Society were read to the members present. The members agreed that the Government be asked to provide suitable roads and a water-tank for the district. A delegate was elected to attend the St. Andrew Branches Associated on 16th June. The House agreed to stand and give three cheers for the newly crowned King. Meeting adjourned with the National Anthem.

AZARIAH CAMPBELL,
Mavis Bank P.O. Secretary.

Rock Hall.—Annual Meeting held 17th May. The meeting opened with the singing of a hymn in memory of the late President, Mr. W. H. Bolton, who departed this life. Heads were bowed and silence observed for 3 minutes as a token of respect, after which prayer was offered by the Secretary. The minutes were read and confirmed. Amongst those present were Instructor Henderson, accompanied by Mrs. Henderson, whose visit was received with hearty appreciation. Present: Mr. S. Breaton, 3rd V.-P. who occupied the Chair, Mrs. B. Heslop and Mrs. J. Burke, Treasurer, and 18 members. The Instructor welcomed the audience, after which he lectured on (1) Cocoa and its uses; (2) Mosaic Disease of canes; (3) Country Fires Law. The Instructor referred to the death of the late President, asking that a letter of condolence be sent to his widow. Election of officers: Mr. E. J. Gregory, elected President; Mrs. B. Heslop, re-elected Secretary; Mrs. J. Burke re-elected Treasurer; Septimus McBean, Asst. Secretary; Mr. Arnold Litchmore, 1st V.-P., Mr. Cecil Curtis, 2nd V.-P., Mr. S. Breaton, 3rd V.-P. Delegates were elected to be sent to the St. Andrew Branches Associated. Correspondence. The Secretary gave a short address. Roll Call. After an enjoyable and lively meeting, the singing of the National Anthem brought the meeting to a close.

(Mrs.) BERTHA HESLOP,
Red Hills P.O. Secretary.

ST. ANN : Sturge Town.—Meeting held 30th April. Present : 16 members and 1 visitor. The meeting was called to order by the President, Mr. C. R. Moss, and prayer offered by the Secretary. Prior to this, a very profitable half hour was spent in the school garden adjoining the schoolroom, where the President gave a very instructive talk with practical demonstration on the planting of banana, for which he was thanked by all present. Of matters arising out of the minutes of the last meeting, resolutions sent to the Secretary of the Saint Ann Associated Branches were discussed, to wit, the Country Fires Law, Thatchfield Land Settlement Scheme, and the need of an Agricultural Show in Saint Ann. It was agreed that these resolutions be fully supported by the delegates attending the meeting of the Associated Branches. The next business was the election of officers to serve during the current year. The retiring President, Mr. C. R. Moss, gave an inspiring address, recounting the activities of the Branch for the year past—the progress made numerically, the use made of the Agricultural Instructor, addresses from the Instructors and others, not to omit one from G. Anderson Cocks, Esq., of Knapdale. He pointed out some of the things for which Agriculture, and this Branch, stand—the improvement of the economic condition of a people and the interchange of Agricultural knowledge. Mr. Moss was unanimously elected to serve for another term, and so were the Vice-Presidents, Messrs. L. Ingram, A. E. Palmer, H. Hall, and L. A. S. Dawes, the Secretary. Mr. Lionel Moss was appointed Assistant Secretary, and the office of Treasurer returned to Mr. Dawes. Delegates were appointed to the St. Ann Associated Branches, which met at Brown's Town on the 8th May. Mr. A. A. Ives introduced to the members the "Cut Eye" or "Overlook" peas, as a useful article of diet. Twelve members paid in their subscriptions. After the singing of the National Anthem, the meeting was brought to a close.

L. A. S. DAWES,
Sturge Town P.O. Secretary.

ST. CATHERINE : Princessfield.—Meeting 26.1.37. The meeting was opened as usual with prayer. There were present : I. A. Peterson, Esq., President, 2nd and 3rd V.-P.s and the Secretary, P. G. C. Graham, and a few more members. The minutes of the previous meeting were read and confirmed. Matters arising from the minutes were read, viz., Road and Water Supply The Secretary was directed to write to the Chairman of the Road Committee, Mr. H. V. Lindo, and Mr. A. A. Walker, M.P.B. for St. Thomas-ye-Vale, to hear about the road matters. Correspondence was read and dealt with. Authorised Persons reported. It was decided that the Secretary should prepare his Annual Report for the next meeting. Mr. H. S. Francis, the Agricultural Foreman, gave a speech about "Co-operation." He said more interest should be shown in the Society for its value and the benefits that can be derived therefrom. He was thanked for his address. The roll was called. The singing of the National Anthem brought the meeting to a close.

P. G. C. GRAHAM,
Bog Walk P.O. Secretary.

Kentish.—Annual Meeting held 26th April. Present : Mr. C. B. Dawkins, 1st V.-P. presiding, 14 members, 4 visitors, the Secretary, Instructor Byles, and Mr. I. Rhone, Foreman. After the reading and confirmation of the minutes, the President gave his address, which was followed by the Secretary's Report. Miss Webley, Assistant Teacher, gave a very fine recitation, "Bruce and the Spider," for which she was accorded a hearty vote of thanks. Roll Call and paying of fees followed. All present paid their subscription. Election of Officers for 1937-38 was next taken, and resulted as follows : President, Mr. C. A. Harriott; 1st V.-P., Mr. T. A. Lewin; 2nd V.-P., Mr. C. B. Dawkins; 3rd V.-P., Mr. Joseph Wilks; Secretary, Mr. J. E. Wilks (re-elected): Treasurer, Mr. Hubert Oliver (re-elected). The President at this stage took the Chair and promised to do all he could for the uplift of the Branch. The Secretary also promised to continue service in the welfare of the Branch. The Instructor in his address congratulated the Branch for keeping together during his absence. He was also glad for the services given to the Branch by the Foreman. His address was based on Agriculture, pointing out the things that were necessary to be cultivated in and around the areas of this district. He was given a hearty vote of thanks by the President and Secretary. Under the heading "New Business," the President promised to re-organize the Juvenile Branch. A Social was planned to come off on June 28. A working Committee was formed to carry it through. The Secretary was instructed to send invitation to the M.L.C. for the parish, also a few members of the Parish Board. After dealing with minor matters, the meeting terminated with the singing of "The King."

J. E. WILKS,
Ginger Ridge P.O. Secretary.

Bowerswood.—Meeting held May 13. In the absence of the President, the Chair was occupied by Mr. John Dempster, 3rd V.P. Present: Seven members and one visitor. In well chasen words, the Chairman outlined the activities of the Branch, in the meantime exhorting and encouraging the members to stick together for their mutual benefit and welfare. The most important items that were discussed were the use and application of fertilizers, and the presence of the Superintendent of Parochial Roads in the district, on the 10th May, in regard to the development of the road. Lively interest was evinced by those present. One A.P. present reported on his work. After a few minor details the meeting adjourned with the singing of the National Anthem.

PETER E. J. DAVIS,
Bog Walk P.O. Secretary.

Wakefield.—Meeting held 3rd May. There was a full turn out of members and visitors. Election of Officers: The Rev. C. L. Battiste, President; Mr. Nathaniel Duffus, 1st V.-P.; Mr. Jos. Eddis, 2nd V.-P.; Mr. Jas. Henry, 3rd V.-P.; Mr. Uriah Page, Treasurer, Mr. L. A. Ferguson, Secretary. It was agreed that a deputation from the Parochial Board be invited to visit the district to see the conditions thereof. The Agricultural Headman had been in the district during the day. The meeting was terminated with the singing of the National Anthem.

L. A. FERGUSON,
Linstead P.O. Secretary.

ST. ELIZABETH: Bull Savanna.—Annual Meeting of the Bull Savanna combined Branches of the J.A.S. and the Vegetable Growers Association was held on the 30th April. Present were: Messrs P. St. L. Bacquie, Carrington, Instructor Lynch, members of the Executive Committee and over 200 members and visitors. Among the visitors were the Rev. Mr. O'Meally and Mr. J. A. Maxwell, President and Secretary of the Nain Branch, respectively, Mr. and Mrs. A. R. Knight of Stanmore, Messrs. B. B. Coke, F. Jones and J. H. L. Dodd, J.P., of Glosomby. Many of the visitors afterwards became members. The meeting was opened with prayer by the President who afterwards welcomed the visitors and friends. The preliminaries having been dealt with, and letters of apology having been read from the following gentlemen: Hons. C. A. Reid, R. Ehrenstein, Messrs. R. A. Burke, P. W. Sangster, Revs. R. J. Flemming and H. Dicken, the retiring President gave a brief address in which he thanked the members for their loyal support in the past, both to himself and the Branch, and asked that the same be continued in the future. He also gave a brief account of the work of the Branches for the past year. He was thanked. The Secretary's Report was next read. It dealt in a full and concise way with all the failures and achievements of the Branch since its resuscitation five years ago, the most important of all its successes being the establishment of the Vegetable Growers' Association. A very praiseworthy letter was read from the Brokers in Canada to whom the tomatoes have been shipped, expressing their high appreciation of the lovely fruits and the excellent way they have been selected, packed and delivered. They also promised an ever ready market for the fruits. The Secretary, in his report, expressed to Major Moxsy the people's gratitude and appreciation of the excellent work he has been doing amongst them. The Secretary was heartily thanked for this excellent report. Owing to the amount of business on the agenda, the election of officers was deferred until the next meeting. At this stage the following resolutions were passed: (1) That the Government be asked for a loan of £700 for the erection of a packing-house; (2) that the Government see to it that the amount of 2 cents per box be retained in the Canadian market; (3) that the Board of Management be asked to provide Agricultural Headmen. Addresses were then given by the following:—Major Moxsy, Messrs. Carrington, Bacquie, E. J. Smith, J. A. Maxwell, Instructor Lynch, and the Rev. Mr. O'Meally. In his address, Major Moxsy gave a brief outline of the growth of the V.G.A., comparing the amount of vegetables shipped this year and the income it brought, with that of last year. He said he was proud to state that over 25 tons of vegetables have been shipped already. He also encouraged the members to go forward with greater determination for the coming season, forgetting the failures and hardships of the past, so that instead of shipping 25 tons for the season, they ship that amount daily. The other speakers dealt with the value of co-operation, as can be seen in the success of the Tomato venture, and asked that they still look to and follow their leaders. At this stage one of the most profitable and enjoyable meetings held since the Branch came into existence, came to a close by singing the National Anthem.

(Miss) E. C. ROYAL,
Alligator Pond P.O. Reporting Secretary.

Pepper.—Meeting held 19.5.37. Present: Instructor Lynch and eight members. Minutes read and confirmed. A short discussion on the working of the district road

took place. The Instructor in his address, encouraged the growth of certain minor products for which he hoped there would be future markets. He advised the planting of : (1) Pineapple, chiefly "Cow Boy" variety; (2) Cassava, which is the chief product of the surrounding districts, should be more extensively cultivated, as there may be great demand for the various products of the cassava; (3) Corn; (4) Red French Bean. The Instrucor advised that the Citrus Industry be not neglected. The meeting then terminated.

(Mrs.) M. A. Atkinson,
Secretary.

Pepper P.O.

ST. JAMES : Catadupa.—General Meeting held 8.5.37. Present : Mr. D. N. Walker, in the Chair; Instructor W. D. Marr, 30 members, including 7 A.P.'s; also several visitors. The President addressed the House on the working of the Branch for the past year, and exhorted one and all to increase the membership. Letter from Secretary of Parent Society was read re handcuffs, etc., of Authorized Persons, and the instructions of the Inspector General, and explained. The Instructor gave an address on Fertilizers. Election of officers resulted as follows : Mr. D. N. Walker, President; L. A. Atkinson, 1st V.-P.; J. L. Smith, 2nd V.-P.; J. L. Martin, 3rd V.-P.; E. L. McDonald, Treasurer; E. S. McAdam, Secretary; and L. E. Gray, Assistant Secretary. The National Anthem ended the meeting.

L. E. Gray,
Assistant Secretary.

Catadupa P.O.

ST. MARY : Camberwell.—Annual Meeting held 21.5.37. Present : Messrs. D. A. Jones, Instructor, J. F. Walters, President, 12 other members, 2 visitors and the Secretary. The meeting began with prayer by Mr. D. A. McLeary. The minutes of the last meeting were read and confirmed. The following matters were dealt with : (a) Concert in aid of the Branch, on the 17th June; (b) Debate at the next meeting; (c) the purchasing of a lamp for the use of the Branch; (d) Registration Office of Births and Deaths for the district; (e) Resolutions to the Half-Yearly Meeting of the St. Mary B.A., to be held June 26. Correspondence dealt with included letters from Capt. Pringle and O. H. Keeling, Esq., regretting their inability to attend the meeting. A.P.s gave in their reports. There was a discussion on the condition of the roads, so as to improve the industrial and social life of the community. It was decided to take up the matter again with the Government. The Secretary presented the Annual Report, which was adopted and highly appreciated. The Instructor was praised for his useful service and helpful hints on spraying, budding, manuring, and fertilizing, from which there have been signs of good results. He spoke at length on the value of co-operation, and asked each member to bring in a new member so as to swell the membership of the Branch. The Treasurer's Report was given showing a small balance in hand. There was the election of officers and of the Managing Committee, which resulted thus : Messrs. J. F. Walters, President (re-elected); J. B. Strachan, 1st V.-P., D. A. McLeary, 2nd V.-P., S. Catnot, 3rd V.-P., Miss J. R. Ebanks, Secretary and Treasurer (re-elected), Miss M. E. Dunbar, Asst. Secretary (re-elected), Messrs. Eric Bertram, Roderick Stewart, Henry Elliot, with the Officers of the Branch, Managing Committee, with Mr. Elliot as Chairman. One new member was enrolled, and fees were collected. Delegates were elected to the Conference of the St. Mary B.A., at Highgate. The President gave his closing remarks. The roll was called, and the singing of the National Anthem brought the meeting to a close.

(Miss) J. R. Ebanks,
Secretary.

Camberwell P.O.

Long Road.—Meeting held 26.5.37. President, Secretary and Treasurer gave their Annual Reports, which were adopted. Election of Officers : President, Secretary and Treasurer were unanimously elected. There were important discussions re Country Fires Law, which resulted in a resolution being sent to the St. Mary B.A. to be dealt with at their Half-Yearly Conference in June. 14 members were present. Other matters were dealt with and the meeting adjourned.

R. H. Hird,
Secretary.

Enfield P.O.

Richmond.—Meeting held 28.5.37. Present : Instructor Jones, Mr. Julius McIntosh, President, Mr. A. Allen, 1st V.-P., Mr. Alexander Davidson, 2nd V.-P., 11 members and 6 visitors, including Messrs. C. L. A. Stuart, W. S. Robinson, and V. A. Bailey. The minutes of the last meeting were read and confirmed. The Instructor gave an inspiring address in connection with his day's work at Mr. J. A. Pinkney's and Mrs. Josephine Alberga's holdings, at Lewisburgh. Mr. S. A. Lindsay moved that the

Instructor be asked to lecture on different species of pineapples at the next meeting. The singing of the National Anthem closed the meeting.

S. A. OFFICER,
Secretary.

Richmond P.O.

Marlborough.—Meeting held 4.5.37. This should have been the Annual Meeting, but the auditors did not audit the books, so an ordinary meeting was carried through. Present were : 8 members and 5 visitors. Usual routine work was carried through. Nine shillings and sixpence was collected as fees. After roll call the meeting terminated with the singing of the National Anthem.

S. L. S. STERLING,
Secretary.

Richmond P.O.

TRELAWNY : Waldensia.—Meeting held May 3. Present were : Mr. C. H. Smart, Vice-President, in the Chair; Messrs. C. C. Lee, Secretary, A. Gray, Asst. Secretary, the Rev. E. A. Jessop, M.A., Treasurer, 20 other members and many visitors. After the meeting was called to order, prayer was offered by the Rev. Mr. Jessop, and the minutes of the previous meeting were read and confirmed. Letter from the Trelawny Parochial Board, giving views re petition for the deviation of the River Hill Road, was read. The roll was then called. Many members paid their annual fees. Another letter from Mr. T. Geddes Grant was read and carefully explained by the Secretary. It pointed out the advantages gained by using fertilizers. The Secretary's expense for the previous year was discussed and passed. It was agreed that the same be refunded. Land Settlement matter was afterwards dealt with. Further discussions were postponed for a future meeting. After minor matters were taken the meeting came to its close by the singing of the National Anthem.

C. A. COTTERELL,
Reporting Secretary.

Sherwood Content P.O.

Wakefield.—Annual Meeting held May 5th. Present : Mr. J. U. Thomas, 2nd Vice-President, Mr. M. N. Thompson, Agricultural Instructor,, and a large attendance of other members and visitors. Before the meeting, the Instructor demonstrated pruning citrus at Messrs. A. Chattoo and E. Grey's holdings. The minutes of the last meeting were read and confirmed. The Secretary's and Treasurer's Reports were read and adopted. After some discussion the Secretary-Treasurer resigned his offices. The Corporal of Police spoke on the rules governing Country Fires Law. The Chairman then gave an address. He vacated his seat, and Mr. V. Barrett presided over the election of officers, which resulted thus : Rev. R. A. L. Knight, President; Mr. V. Barrett, 1st V.-P., Mr. A. Lavlor, 2nd V.-P., Mr. R. Nunes, 3rd V.-P., Mr. C. E. Wilson, Secretary, Miss E. Barrett, Assistant Secretary, and Miss M. Cooke, Treasurer. The Managing Committee consisted of : Mr. P. Stewart and Miss M. Gale. Authorized Persons gave their reports. Correspondence was dealt with. Subscriptions were paid in. It was agreed that 2/6d. affiliation fee be forwarded to the General Secretary of the Trelawny Branches Associated. The Instructor then lectured on the burning of bush. Minor matters were dealt with, and the meeting adjourned.

E. S. BLISS,
Secretary.

Wakefield P.O.

Deeside.—Annual Meeting held 4th May. Present : Messrs. H. E. Scott, President, M. N. Thompson, Agricultural Instructor, and 15 members. Minutes of previous meeting were read and confirmed. The Secretary presented his Annual Report which recorded many profitable activities of the Branch during the past year. The Treasurer's Report showed a balance of 15/- in hand. The election of officers resulted as follows : President, Mr. H. E. Scott, 1st Vice-President, Mr. D. B. Clarke, 2nd Vice-President, Mr. D. N. Brown, 3rd Vice-President, Mr. W. M. Beckford, Secretary, Mr. A. O. E. Wright, Treasurer, Mr. J. E. Brown. A Managing Committee was formed. One A.P. reported no arrest. The Instructor gave an inspiring lecture which contained many useful hints. A vote of thanks was accorded him. Minor matters were dealt with. The meeting terminated with the singing of the National Anthem.

A. O. E. WRIGHT,
Secretary.

Deeside P.O.

WESTMORELAND : Cairn Curran.—Meeting held 14.5.37. This was the Annual Meeting of the Branch. Present were : Mr. E. W. Prout, President, 11 members and Instructor F. W. Kelly. Election of officers : President, re-elected; Miss P. A. Hemmings elected Secretary and Treasurer. Instructor Kelly gave an inspiring address

on Fertilizers, also preparation of soil. The meeting adjourned with the singing of the National Anthem.

(Miss) P. A. HEMMING,
Darliston P.O. Secretary.

Content.—Annual Meeting held 23.4.37. There were present: the President, Instructor Kelly, 20 members and a number of visitors. The meeting was opened with prayer, after which the minutes were read and confirmed. As arising out of the minutes, Mr. Kelly gave a report on the visit of this Branch to the Holly Hill Branch to hear lecture on Potato Cultivation by Instructor Graham. Letters were read from Messrs. T. Geddes Grant, Limited, re Fertilizers, and from the Parent Society re Annual Meetings and affiliations. Both these letters were discussed. A letter was also read by the Instructor bearing on the possibilities of the Pineapple Industry. Another was read re Country Fires Law. A general discussion followed on that subject. Reports given in by the Secretary and Treasurer were received and adopted. The President gave an address. The election of new officers resulted as follows: President, Mr. J. A. Campbell (re-elected); 1st V.-P., Mr. L. L. Williams, Secretary, Mr. J. R. Gage (re-elected unopposed); Treasurer, Miss L. Henry (re-elected). A Managing Committee of 5 members were formed. The Instructor at this point addressed the meeting on the Growing of Potatoes, and in the interest of the district as a Potato growing area, it was decided to purchase a good spray from the funds. One Authorized Person was elected by the House, and delegates were nominated to attend the Half-Yearly Meeting of the Westmoreland Branches Associated. The meeting then terminated with the National Anthem.

J. R. GAGE,
Bluefields P.O. Secretary.

Sheffield.—Annual Meeting held 19th May. Present: Mr. F. W. Kelly, Agricultural Instructor, who was in the district during the day doing demonstration work; Mr. F. H. Touzalin, 1st V.-P., who occupied the Chair, 9 other members, some visitors, and the Secretary. The meeting opened with prayer. Mr. Touzalin welcomed the members and friends present. Minutes read and confirmed. Correspondence read and discussed. The financial statement of the Secretary and Treasurer was presented and adopted. The election of officers resulted as follows: Mr. V. G. Chambers, President; Mr. F. H. Touzalin, 1st V.-P. (re-elected); Mr. Nathaniel Laurence, 2nd V.-P.; Mr. S. M. Hall, Secretary (re-elected); Miss Gertrude McKenzie, Asst. Secretary; Miss M. M. Jackson, Treasurer (re-elected). The President and Secretary also thanked the members for having re-elected them, and promised to do their best. The Secretary moved a resolution that a letter of appreciation be sent to Mr. Campbell, Ex-President, thanking him for his services to the Branch, and wishing him a speedy recovery from sickness. Mr. Kelly suggested that he be made an honorary member of the Branch. This was agreed to. Mr. Touzalin said that the Bee Instructor would very likely be in the district at an early date to hold a meeting, etc. Some matters re Telephone to be attached to the Post Office here, were discussed. The Instructor lectured on Fertilizers. A vote of thanks was accorded him. Two Authorized Persons reported "all correct." The meeting closed with the singing of the National Anthem.

SAML. M. HALL,
Sheffield P.O. Secretary.

Strawberry.—Annual Meeting held 11.5.37, the procedure of which was as follows: (i) A song, followed by a few brief remarks by the President; (ii) Reading and confirmation of minutes, matters arising out of which included question of a road; (iii) Correspondence from merchants in Kingston re Fertilizers. Instructor Kelly gave advice re use of same. Other letters were read and dealt with. (iv) Short address by Mr. H. N. Plummer, M.P.B., on the road in question. He informed the Branch that the Superintendent had said that as soon as funds are available, something would be done. (v) The President moved the following resolution: Be it resolved that the Branch agitate for a Road, Infant School, and a Certified Midwife. (vi) Election of Officers for the coming year: Mr. E. S. Ruddock, elected President; Mr. H. N. Plummer, re-elected 1st V.-P.; Mr. M. E. Beckford, elected 2nd V.-P.; Mr. F. Wesley Reynolds, re-elected Secretary; Mr. Harold Reynolds, re-elected Asst. Secretary; Mr. J. A. Clark, Treasurer. Singing of the National Anthem brought the meeting to a close.

H. WESLEY REYNOLDS,
Friendship P.O. Secretary.

Branch and Secretary.	Date of Meeting.	Attendance.	Business.
Manchester.			
Mizpah (U. C. Wolfe)	24 5 37	8	Ram. Irish potato Demonstration Plot.
St. Andrew.			
Wesphalia (S. T. Parkes)	30 4 37		Routine matters.
St. Ann.			
Sturge Town (L. A. S. Dawes)	28 5 37	9	Report of delegates to St. Ann Branches Assoc. Address by Instructor Robotham. Correspondence.
St. Catherine.			
Bowerswood (P. E. J. Davis)	8 4 37	25	Election of officers. Report of A.Ps.
St. Elizabeth.			
Springfield (U. K. Walters)	7 5 37		Correspondence. Report of A.P. Address by Instructor Wray.
Pepper (Mrs. M. A. Atkinson)	21.4.37	16	Country Fires Law. Correspondence. Reports of Secretary and Treasurer.
St. Mary.			
Epsom (F. A. Edwards)	5 5 37	16	Land Settlement. Railway Siding. Address by Instructor Jones.
Free Hill (N. B. Falconer)	27 5 37	11	Correspondence. Election of delegates to attend St. Mary Br. Assoc. Water Supply. Tobacco. Report of A.Ps.
Marlborough (S. L. S. Sterling)	23 3 37	Over	Report of A. P. Routine matters
Lucky Hill-Jeffrey Town (F.W Geohaghan)	18 5 37	19	Election of officers. Report of A.Ps. Addresses by Messrs. Stuart Bailey and Robinson
Mt. Regale (T. H. Hannam)	7 5 37	14	Routine matters.
Porter's Mtn. (D. F. Bowen)	17 5 37	25	Correspondence. Report of A.P.

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" " " (to hold 10 lbs.)	5/4 each
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Put up in strong Manilla envelopes holding one ounce each	9d. per 16 pkt
N.B.—Orders for less than 16 packets not accepted. All applications must be accompanied by an agreement to retail the poison to the public at a price not exceeding one penny per packet, one penny per ounce or nine pence per lb.	
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*TESTING OUTFITS, COMPLETE, including cost of containers and mailing case	7/2 each
*STANDARD IODINE SOLUTION, in 9 oz. bottles (including cost of bottle, 6d., and mailing case 2/-)	3/- each.
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N.B.—Purchasers of Fly Killer must provide their own containers.	

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THE JOURNAL

OF THE

Jamaica Agricultural Society.

The more people do the more they can do; he who does nothing renders himself incapable of doing anything; while we are executing one work we are preparing ourselves for undertaking another.

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BOARD OF MANAGEMENT.

The usual monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the Offices of the Society, 10-12 North Parade, Kingston, on Wednesday the 2nd June, 1937, at 11.30 a.m. There were present: Hon. George Seymour Seymour, O.B.E., First Vice-President, Chairman, Rev W. J. Thompson, Second Vice-President, Mr. U. Theo McKay, Third Vice-President, Hon. A. C. Barnes, C.M.G., Director of Agriculture, Messrs. T. J Cawley, C. O Cover, T P. V. McDaniel, D. D. Phillips, W. Harper Watson, D. T. Wint, Mr. A. P. Hanson, Supervisor of Instructors, and the Acting Secretary, Mr. P. St. L. Bacquie.

Confirmation of Minutes of the Previous Meeting.

Copies of the minutes of the previous meeting having been sent to members of the Board, were taken as read, and on the motion of Mr. McDaniel, seconded by Mr. McKay, they were confirmed.

Matters arising out of the Previous Minutes.

(a) *Statement by Secretary*—The Acting Secretary read as follows:—

1st June, 7.

Relative to the new site for the Apiary, as instructed, I got into communication with the Water Commission and the Secretary replied saying that the Commission was now negotiating with Central Government for putting its land in this area to some profitable use, and until a decision was made by Government as to what should be done in the matter he would be unable to treat.

This being so, I have asked the Bee Instructor to again try for a spot. I am thinking that if we could get the spot on the Hope lands known as Blue Castle, it would make a splendid location, and suggest that I be allowed to approach the Director of Agriculture to this end.

All correspondence consequent on the deliberations of the Board at their last meeting has been carried through.

(Sgd.) P. ST. L. BACQUIE,
Acting Secretary.

With reference to the site for the apiary the Director of Agriculture said he would have no objection to letting the Society have the spot on the Hope lands, but he did not think it would be suitable, not being central.

It was decided that the Chairman should take up the matter with Government with a view to securing the land on the Spanish Town Road.

(b) *Co-ordination of Agricultural Field Service*: This matter was deferred from the previous meeting in order to receive an alternative memorandum by Mr. Wint, which was now presented and considered, together with that of the First Vice-President which read as follows:—

MEMORANDUM BY 1ST VICE PRESIDENT.

RE UNIFICATION OF THE AGRICULTURAL EDUCATIONAL STAFF OF THE COLONY.

The Board of Management may properly consider themselves trustees appointed for the welfare and continuance of the Jamaica Agricultural Society and as such can hardly be expected to surrender willingly its field staff to any other organization outside of its control, or to in any other way curtail its services to the public and so lessen its influence and activity. To do this would be to forego the primary object for which it was created over forty years ago, i.e., Agricultural Education, the improvement of agriculture in all its branches, and the organization of the farmers of the Colony into Associations which offer the best means of reaching and influencing them and for general agricultural propaganda work.

The value of the agricultural work in general done by the Society in the past is well recognized by those who are familiar with the Colony's rural conditions of the past and present. To the stranger who has not the advantage of the comparative background of the past, the achievements of the Society may not be so readily recognized, due also in great measure to the nature of our past operations which have been more general in scope rather than a concentration of effort on more specific projects. The later policy of the Society has been to include in its operations specific projects such as :—

Bombay Mango Extension;
Trial plots for various crops—peas, cassava, etc.
Cashew nurseries.
Co-operating in the Citrus Extension Campaign, etc.

but not at the expense of the general agricultural educational work and organization which they consider to be basic to the welfare of the country's agriculture.

Up to three or four years ago the direct contact between the small farmers of the colony and the Department of Science and Agriculture was negligible, and such direct contact as there was, consisted mainly of the enforcement of the Plant Disease Control Regulations.

The Department of Science and Agriculture was regarded as the agricultural police and the Jamaica Agricultural Society as the agricultural missionary.

The larger farmers made their incomes from a limited number of crops which they produced on a fairly large scale, which crops lent themselves to the type of estate organization available and became known as staple or major crops, crops such as sugar and rum, bananas, coconuts, livestock, etc. The various vicissitudes occurring to these crops in the post war period, focussed public attention to the need of alternative crops, and it was realized that no one or two crops could prove adequate alternatives, but that many minor crops would have to be developed to meet the situation.

This situation resulted in the Board of Management of the Society pressing on Government suggestions for the development of several different crops, each of which it felt held possibilities. This development, when the suggestions were accepted by Government, required special concentration on each definite project and expenditure of money. Each such project has in turn been entrusted to the Department of Science and Agriculture, and more or less an agricultural educational staff has had or will have to be built up around each project. Some of these projects have agricultural credit schemes supplementary to them.

The modification of the Panama Disease quarantine regulations has also lightened the work necessary for its enforcement and has made available for instructional work to a greater or lesser extent the staff of Plant Disease Inspectors, which is quite as large as is this Society's Instructoral Staff.

The Government in the meantime cannot be persuaded to increase the subvention to the Jamaica Agricultural Society for routine work, feeling possibly that it is

increasing expenditure on agricultural welfare work, but on the more specific projects.

We therefore find that gradually two duplicate services have come into being, and operating as such there can be no question that there cannot exist the highest efficiency in money spent for services obtained, or the fullest economy in effort, time and travelling. We have two bodies of men doing sections of work becoming more and more of a similar nature, travelling, over the same ground and serving the same people.

Unification of the staffs would make for easier control, unity of policy, economy, higher efficiency, lessened travelling per man, more intensive work, all of which spells quicker agricultural progress.

The real question for the Board of Management is, how to accede to unification of service and live?

The real question for the Government and country is, should the Society live?

These two questions bring us to the consideration of the type of organization best suited to help and influence the farmers of the colony, especially the small farmers, the class that needs the most assistance, guidance and teaching.

We, the Society, claim that our democratic organization is best suited for the purpose. Our methods of contact and approach to the farmers are the ones that are most likely to encourage the co-operation and support of the small farmer in matters of the best interest to himself. The Government official is least likely in Jamaica to achieve the objects desired. The freedom of speech, the inherent right of our Branch Societies and Associations, must not be restricted or impinged upon, or we will find our small farmers retiring into their shells and becoming increasingly resistant to influences and even resentful of interference. The value of free speech and of the existing channels of representation of needs and grievances by the humblest classes to those in higher authority is inestimable, both as a safety valve to the population and as a training ground for the masses of constitutional communal action.

It is interesting to note that all the teaching institutions of the colony are managed by various bodies, even although the Government pays the cost, and it can hardly be denied that the voluntary services of management contributed by such bodies are of great value and also ensures content and prevents to a great degree much friction that otherwise the Government might experience. For these reasons and others we feel that elementary agricultural education is best entrusted to the Jamaica Agricultural Society.

The Society cannot live without its field staff; without this the Society would be reduced to a seed shop,—the Board of Management to merely one of the many agricultural Boards, but without finance,—would possibly lose many of its members, who would feel that there was no scope for usefulness, and so gradually lose its position, prestige and influence and eventually disappear; or it may be continued merely as a body for the expression of agricultural public opinion, but as such may be overshadowed by organizations already existing, wealthier and more powerful.

Unification should be encouraged, and it appears that the only factor operating against this is the question of control. With the Director of Agriculture as an ex-officio member of the Board of Management, there should be no difficulty in his being given the freest hand for organizing and carrying through the direction of the colony's agricultural teaching. At present the duties devolve on two Committees of the Board of Management, i.e., the Planning Committee, whose Chairman is the Director of Agriculture, and which Committee makes recommendations on the matter of policy, and the Instructors' Committee, which reviews the work of the Instructors and to which the Secretary and Supervisors of the Society report.

The personnel of the Planning Committee consists of :—

The Director of Agriculture, Chairman.
Hon. R. Ehrenstein.
Mr. T. P. V. McDaniel.
Mr. D. T. Wint.
The three Vice-Presidents of the Society.

That of the Instructors' Committee consists of the membership of the whole Board.

It may be argued that these Committees may be too unwieldly. Changes may, however, be made by replacing both Committees by a smaller body elected by the Board of Management and with the Director of Agriculture permanent Chairman.

Unification of staffs under such control would give the Director of Agriculture full opportunity for direction, bring additional prestige to the Society and achieve that heightening of efficiency and the increase of the agricultural educational services of the colony, with that economy of effort, time, travelling and money which it is desired to achieve.

His Excellency the Governor, having more than once publicly stated his anxiety that the status and prestige of the Society should not be impaired, should have no objection to adopting any formula that would enable unification, improved control, etc., and at the same time ensure the continued existence and progress of the Society, which latter is the desire of the agriculturists of the colony.

Mr. Wint's memorandum reads:—

SUGGESTED SCHEME FOR THE FUTURE OPERATION OF THE JAMAICA AGRICULTURAL SOCIETY.

The Jamaica Agricultural Society, founded forty years ago and operated more or less with commendable success, has reached the stage where it becomes more and more difficult to fulfil the objects for its creation in a manner satisfactory to present day conditions and requirements, through lack of funds.

The Society, in spite of its many thousand members, exists on the subvention granted yearly by Government, and this subvention has grown to an amount which Government hesitate to increase under present control. Yet the Organization cannot be replaced by Government since its success depends largely on its democratic principles. That being the case it is apparent that a solution of the difficulty lies in allowing Government a reasonable amount of control and management, without destroying the democracy of the Organization. When this is done, Government will be placed in a position where they cannot deny responsibility nor cavil at expenses necessary to operate schemes in fulfilment of the objects of the Society which are recommended by a Board of Management, democratic in principle and operated under the guidance and partial control of Central Government.

The objects for which the Society was created are put down by the First Vice-President of the Society as (1) Agricultural Education; (2) The improvement of Agriculture in all its branches; (3) The organization of the farmers of the Colony into Associations which offer the best means of reaching and influencing them; and (4) General Agricultural Propaganda work.

No. (1) can now be put in its proper place. No. (4), since this is largely the duty of Central Government, and if undertaken by the Society can only be done successfully with the fullest co-operation of Government. Democracy should have no ground for complaint if the Society is put in a position to further to the fullest the interest of farmers by a concentration of efforts on specific projects in fulfilment of objects Nos. (2), (3), (4) as they now stand. This I venture to suggest will not be brought about so readily by a "unification of the Agricultural Educational staff" as by a modified form of control which will bring to the Society's Board of Management a Government Grant or Subvention sufficient to meet its annual requirements.

Thus, while I cannot see what is to be gained by the Society in the taking over of the Government Plant Disease Inspectors, I believe much would be lost. The Society is, for one, not a scientific department, and the treatment of plant disease is more or less scientific. On the other hand, while it would be unwise to surrender its field staff, there is no reason why (1) the men should not be paid through the Department of Science and Agriculture since it is the Government who provide the money for such salaries. This will of course give the Department of Science and Agriculture authority which it has not got at present, but if the Director of Agriculture is made permanent Chairman of the Board of Management, it will be a joint control which will in no way adversely affect the Society. The Society through its Board of Management would retain all its present privileges and powers. It would also profit in the following manner :—

The bulk of the present subvention goes to pay salaries, a fact which the Government seem conveniently blind to, taking cognizance more especially of the total subvention and ignoring the very important point that after salaries are paid very little is left to the Board of Management for utilization in its services to the public. This would be corrected.

2. The Government should, under the new arrangement, agree to make to the Society an annual grant or subsidy sufficient for the reasonable fulfilment of objects (2), (3) and (4) for which the organization was created. Such amounts should be entirely controlled by the Board of Management.

3. The Director of Agriculture should be the permanent Chairman of the Board of Management and of all Committees, unless a Chairman is specifically named at the time of appointing the Committee. This would bring about joint control without destroying the democratic principles and place the Government in the position where they could not easily ignore recommendations of the Board of Management involving expenditure for lack of confidence in them since they (the Government) would be party to such schemes through their Chief Agricultural Officer. In my opinion it would also secure increased confidence from the public and membership by bringing to the Society a large number of the bigger farmers; and however desirable it may be that the Society should embrace the small farmers it is as desirable that all agriculturists and farmers should be under its banner.

4. The Chairman of the Board of Management would not be the Chairman at Annual, Half-Yearly or special general meetings, where the present arrangements would continue to operate.

5. With the Director of Agriculture as permanent Chairman of the Board, it would

perhaps be found useful and advisable to appoint one of the Jamaica Agricultural Scholars as Secretary to the Society. Those young men, educated at the expense of the Colony, should be placed in positions to be serviceable to the agricultural interests of the Colony.

The First Vice-President of the Society in his Memorandum to the Board of Management says :—

"The freedom of speech, the inherent right of our Branch Societies and Associations, must not be restricted or impinged upon, or we will find our small farmers retiring into their shells and becoming increasingly resistant to influences and even resentful of interferences. The value of free speech and of the existing channels of representation of needs and grievances by the humblest classes to those in higher authority is inestimable, both as a safety valve to the population and as a training ground for the masses of constitutional communal action."

With all this I entirely agree, and the suggestions here made for the future operation of the Society, it will be observed, are made with the main idea of placing the Board of Management in a most efficient position, financially to serve Branch Societies and Associations, without in any way limiting freedom of speech or action.

(Sgd.) D. THEO. WINT,
Member of the Board of Management.

The Acting Secretary said that he had circulated Mr. Wint's memorandum and had endeavoured to call the Special Meeting but had not succeeded.

The Chairman read recommendations 2 and 3 of Mr. Wint's memorandum.

As regards the Director of Agriculture being made permanent Chairman of the Board of Management he thought the adoption of that scheme would make it unnecessary to have any Vice-Presidents at all as there would be no duties for them to perform. It might prove an excellent scheme but he did not think it should be so ex-officio because they did not know who would be the next Director of Agriculture.

The Rev. Mr. Thompson said that while he had no objection to the Director of Agriculture being Chairman of the Board of Management, he thought that should be the subject to the rules governing election He thought the whole question should be determined by the Half-Yearly Meeting

The Chairman said they ought to give the Half-yearly Meeting a lead, though they were not bound to accept

Mr. Thompson said from his experience of Half-Yearly Meetings, the delegates and members came there with foregone conclusions and they were not likely to accept anybody's opinions. He did not think they could make any recommendations worth while until they got the expressed opinion of the General Meeting.

Mr. Cover said he understood that the Board was going to shape some policy to put before the Half-yearly Meeting. His opinion was that they should go into it thoroughly and then express their views in a document to the Half-Yearly Meeting.

Mr. McKay agreed with Mr. Cover.

The Chairman recalled that it had been definitely decided when they heard the proposals of the Conference at King's House that they could not agree to the proposal to have three members managing the Society and it had been decided that the matter should stand as it was, that the Director of Agriculture should be Chairman of the Instructors Committee and that the Government should be asked to co-ordinate existing field services and to put the Society's Instructors and the Inspectors of Plant Diseases under the Agricultural Society. Mr. Wint had now submitted a memorandum and the Board should take what they had actually done, along with Mr. Wint's memorandum, and come to some conclusion.

At this point Mr. Cawley moved that the Board go into Committee This was seconded by Mr. McKay and carried.

Mr. McDaniel said he did not see that by appointing the Director of Agriculture permanent Chairman the Government would have more control over the Officers of the Society. He read extract from the speech of the Hon. J A. G. Smith in the Legislative Council, regarding the Society's subvention and usefulness of the Society.

Mr. McKay made reference to the Elected Members who had spoken on the Society in the Council and said that special thanks was due to the First Vice-President. He thought the agricultural interests of Jamaica should be thankful to the Hon. George Seymour Seymour, as a member of the Legislative Council for the splendid way in which he had supported the Society.

He went on to say that the idea of this co-ordination was to prevent overlapping of work, but he did not agree with this being the case as the work of the Inspectors of Plant Diseases was to prevent or cure diseases and the work of the Instructors was advisory and helpful in increasing the economic prosperity of the Island and he also thought the Inspectors of Plant Diseases should be under a scientific head. The Instructors were at the beginning only of assistance to the small planter, but now that our major crop was attacked by disease, their services were in demand by the large proprietors also and they were more fully appreciated. He took the opportunity here of referring to cases of Panama Disease which had gone untreated for months and said that if the Plant Disease Inspectors were doing their duty this would not be the case. He did not think anything could supplant the Agricultural Society as it existed today and making the Director of Agriculture permanent Chairman would serve no purpose except to take away from the members of the Society the privilege of electing their Chairman. He agreed that there could be no improvement but expressed the opinion that that could only be achieved by financial assistance from Government rather than by temporary means of co-ordination. He mentioned certain projects suggested by the Society which could not be carried through for lack of funds; the Department of Agriculture, however being in a financial position to do this, had successfully worked them up and had received the credit.

The Director of Agriculture said he was surprised at Mr. McKay's criticism of the Plant Disease Inspectors, which he thought was unreasonable. If they did not do their work satisfactory they would not be there, and as against the Society's twenty-one Field Officers they had eighteen. He expected, however, that in the near future they would have a field staff of not less than twenty or thirty. He was not referring to Plant Disease Inspectors but to Officers dealing with citrus, vegetables, tobacco, stock and other projects of the kind. It was the endeavour to bring these officers together that had caused all this discussion. He had no desire to be made Chairman of the Board of Management, but if the desired results were obtained by doing this he would be very glad. His idea was not domination of any organization or any particular group of people but an attempt to carry this country forward towards a goal of agricultural prosperity, and he looked to the Agricultural Society and its Officers to help him.

Mr. Wint said the whole thing involved was that they wanted to get the Society settled in some way that would satisfy the Government, so that they might receive a subvention that would enable the Society to work for the benefit of Agriculture. He pointed out that he had not discussed with the Director of Agriculture the suggestion that he should be made permanent Chairman of the Board of Management. He thought it would be in the interest of Agriculture to have closer co-

operation between the two departments. There was nothing mentioned in his scheme about supplanting the Society or taking away its democracy.

Mr. Cover supported Mr. Wint's recommendation that the salaries of the Instructors should be paid by the Department of Agriculture—as that would leave the Society with more money for carrying out demonstration work, etc.—and assigned to the Society, under absolute control of the Board of Management. As far as making the Director of Agriculture permanent Chairman was concerned, he was not in agreement, as he thought that would destroy to a great extent the usefulness of the Society and would place the Director in a very unfortunate position. As regards appointing as Secretary, one of the Jamaica Agricultural Scholars and paying his salary from the Department of Agrriculture, he thought the Secretary should always be appointed by the Board and paid and controlled by them.

After some discussion, Mr. Watson moved: That the proposal to take over the Plant Disease Inspectors from the Government and place them under the control of the Board of Management be struck out.

Mr. Phillips seconded this and it was carried.

The Chairman moved: That the portion of Mr. Wint's report recommending to this Board that the Director of Agriculture should be permanent Chairman of the Board of Management be struck out.

Mr. McKay seconded this and it was carried.

On the motion of Mr. Cawley, seconded by Mr. Cover, the following resolution was passed: That the Planning Committee be abolished and replaced by an Instructors' Committee with the Director of Agriculture as Chairman, to have executive authority over the Instructors in regard to field work, and to send in reports to the Board of Management for information, this Committee to function for one year at the end of which the whole matter will be reviewed. The number of the Committee shall be seven and the quorum three.

Mr. Cover moved: That the Director of Agriculture be asked to undertake the paying of the salaries of the Instructors and assign them under the absolute control of the Society should form a part of the recommendations.

Mr. McKay moved as an amendment: That they submit to the Half-Yearly Meeting that the matter of salaries be referred to the Instructors' Committee for action.

This was put to the vote and carried.

The Board then resumed.

Mr. McKay moved that what had been done in Committee be confirmed.

Mr. Cawley seconded this and it was carried.

"Piano" Grass.—The Acting Secretary here referred to the spread of the "Piano" or "Christmas" grass..

He was instructed to communicate with the Director of Agriculture with a view to formulating some scheme for its eradication.

The following Notice of Motion was here handed in by Mr. Cawley:

That at the end of the June Quarter of this year a complete Stock Taking of the Seed Department of this Society be taken and the cost of the several members of the Office Staff who assist in whole or part be offset against any profit so ascertained.

The Secretary was instructed to circulate this along with the information required.

Before the adjournment the Chairman took the opportunity of wishing the Director of Agriculture, on behalf of the members of the Board, bon voyage.

The Director of Agriculture thanked the Board for their kind wish[illegible]
The meeting then adjourned for luncheon.

On the resumption there were present: Hon. Geo. Seymour Seymo[illegible]h O.B.E., in the Chair; the Director of Agriculture; Messrs. T. P. V. McDaniel and U. Theo. McKay; Mr. A. P. Hanson, Supervisor of Instructors and the Acting Secretary, P. St. L. Bacquie. It was decided to continue the Agenda and have the business done ratified as soon as there was a quorum.

The following members attended later: Mr. W. Harper Watson, Rev. Mr. Thompson and Mr. T. J. Cawley.

(c) *Building of the New Store.*—The Chairman asked the Board to authorise the amount of £273 14s. 2d., being used from the profits of the Seed Department towards the building of the new store, for which they already had £176 5s. 10d., left over from the building grant—the amount required being £450.

This was agreed to.

The Acting Secretary was also instructed to have the overhanging roof in front of No. 10 extented to even up with that of No. 11 of the office premises and other minor additions effected, and the Chairman was asked to arrange with some reliable builder to this end.

Statement of Accounts.

(a) *Statement for April.*—The Secretary stated that this had appeared in the Minutes.

(b) *Statement for May* was also submitted

Balance Sheet and Income and Expenditure Account for year ending 31st March, 1937, were also presented and the Acting Secretary was instructed to circulate these.

Resolutions.

(a) *Mr. U. Theo. McKay re Quota of Sugar allowed Jamaica.*—Mr. McKay asked that this be deferred until they had some more information on the subject.

Mr. Watson here entered and as there was now a quorum the business already done was approved.

(b) *Mr. Theo. McKay re Supply of Fertilizers to Instructors f[illegible] experimental purposes.*—This was presented as follows:—

That each Agricultural Instructor be provided with 150 lbs. of Fertilizers of different kinds put up in packages of 25 lbs. each, for the purpose of experimenting, and that a report be furnished within six months and another within one year to the Board of Management.

Mr. McDaniel in seconding the resolution asked that the Director of Agricutlture give them some information on the use of fertilizers.

The Director of Agriculture suggested that a form be prepared showing the name of the Instructor, District, Nature of Crop, Location, particulars with regard to soil, etc., with a space for recommendations by the Department of Agriculture as to fertilizer to be used, this form with the necessary information to be sent in when requisitioning for fertilizers.

He also suggested as an amendment to the resolution that the word "demonstrating" be used instead of "experimenting" and that the Report be made to the Instructors Committee.

With these amendments the resolution was carried.

The Rev .Mr. Thompson and Mr. Cawley here joined the meeting.

Sale of Fertilizers.—
op While on the subject of fertilizers, the Acting Secretary said he would in w attention to the promiscuous sale of fertilizers by certain firms.

The Director of Agriculture said that he thought the Government were alive to the fact that the Law made in 1902, governing the sale of fertilizers now needed amending. He suggested that the Secretary get in touch with Commander Clarke, of the Imperial Chemical Industries Ltd., sending the correspondence through him, and try to arrange a Conference, to which he should invite Mr. Buie, of Geddes Grant Ltd., Mr. Evelyn, of Bryden & Evelyn and Mr. Ewan Macdougall, whose firms dealt in this commodity.

The Secretary was instructed accordingly.

Communications.

(a) *Request from Secretary Bartons Branch for contribution to School Prize List.*—The Secretary was instucted to advise the Branch that the Board could not consider grants of this nature.

(b) *Invitation from Secretary Manchester Branches Associated to Half-yearly Meeting on June, 12th* was noted

Reports from Committees.

(a) *Instructors.*—Report of the meeting of the Instructors Committee was submitted as follows:—

2nd June, 1937.

Your Instructors' Committee met this morning and beg to report that Instructors Henderson and Marr will be on leave during the month of June as per schedule.

2. Your Committee also recommend the affiliation of the Muir House Buxton Branch in St. Ann.

(Sgd.) U. THEO. MCKAY,
Chairman.
(Sgd.) P. ST. L. BACQUIE,
Acting Secretary.

On the motion of Mr. Thompson, seconded by Mr. McDaniel, this was adopted.

(b) *Office.*—The Acting Secretary reported that the Office Committee had not concluded their deliberations at the meeting held that morning.

Disease of Plants and Animals: Insect Pests.

(a) *Panama Disease of Banana.*—Report for March, 1937, was laid on the table. The Acting Secretary said copies of this had been sent to the members of the Board.

Mr. McKay drew attention to the fact that there were too many cases of Panama Disease left untreated and thought that treatment should be done by the Inspectors of Plant Diseases and not left to the proprietors.

The Director thanked Mr. McKay for mentioning this and said that every effort was being made to impress on planters the necessity for reporting cases of Panama Disease. He said that at the last Instructors' Course it was proposed that a lecture should be drafted which the Instructors should use at Branch meetings, pointing out the necessity for treating this disease and he hoped the Society would approve of this.

The Chairman asked that when the lecture was prepared it should be printed and sent out, and to this the Director of Agriculture agreed.

Agricultural Foremen in St. Catherine.—The Secretary read as follows:—

1st June, 1937.

In respect to the experiment with Foremen in St. Catherine, I beg to call attention to Paragraph 4 of the recommendations as per Page 339 of the Journal for June-July, 1936, and to ask for instructions in view of the pending discussion on the co-ordination of the agricultural field services of the Island. The paragraph reads thus :

"That the experiment be carefully observed by the Secretary and Supervisor and reported on at the end of six months, and that a small Committee of the Board of Management be appointed at the end of a year to inspect this Instructoral area and report to the Board."

The first inspection should have been made some time in January last, and the second some time in July proximo.

(Sgd.) P. St. L. Bacquie,
Acting Secretary.

On the suggestion of the Director of Agriculture it was decided to form a Committee consisting of Messrs. Cawley and McDaniel, along with Supervisor Hanson and the Acting Secretary to go into the question, the Instructor for that area being consulted.

Office.

(a) *Secretary's Report on Travelling for May* was submitted as follows :—

1st June, 1937.

I beg to report that on Monday, 17th May, I travelled down to Stewart Town, in Trelawny, to visit the Corn Club in course of construction on Mr. Fagan's place there. This is almost complete and should be ready to take corn on the cob from the next crop.

P. St. L. Bacquie,
Acting Secretary.

(b) *Leave.*—Leave on Doctors' certificates was granted to Mrs. E. M. Edwards for five weeks, and to Miss D. E. Hilton for one week

Shows.

(a) *Hanover Branches Associated.*—The Acting Secretary reported that they had paid the usual deposit. Authority was therefore granted for holding the Show on the 1st August, 1938.

(b) *Manchester Horticultural Exhibition*—24.5.37.—Prize List was laid on the table.

Resolutions from Branches.

(a) Bull Savanna—(i) *Protective duty on vegetables exported to Canada.*—The Acting Secretary was instructed to forward this to Government.

(ii) *Services of Instructor in the District during the vegetable growing period.*—This matter having already been decided on at the previous meeting, was not discussed.

New Members.—On the motion of Mr. McKay, seconded by the Chairman, the following new members were elected.

Vivian A. Miller, Morant Bay; Edward Perkins, Shaftesbury Cottage, Welcome Hall; Miss H. Nunes, 2a Portland Road, Kingston.

Other Business.

(a) *Vegetable Growing in St. Elizabeth.*—Interview with Major *Moxsy.*—The Acting Secretary tendered apology for absence from Major Moxsy.

(b) *Letter from C.S.O. re appointment of Acting Secretary on Advisory Board under the Agricultural Produce Law* was presented.

(c) *Application from Mr. R. A. Burke for 3½ months leave as from the 2nd June.*—The Acting Secretary was directed to write Mr. Burke

expressing the Board's sympathy in his illness and wishing him bon voyage.

(d and f) *Applications from Haddo and Mizpah Branches for stud goats* were presented and granted, subject to approval of the animals by the Acting Secretary and the Supervisor.

(f) Resolutions from Clarendon Branches Associated re:

(i) Appointments of Agricultural Foreman for Kellits.
(ii) Post Office for Rock.
(iii) Post Office for John's Hall.
(iv) Telephone Service at Toll Gate.
(v) Compulsory Education for Toll Gate.
(vi) Appointment of District Constable for John's Hall.
(vii) Analysis of Whitehouse Banana.
(viii) Country Fires Law for Clarendon.
(ix) Irrigation of Mid-Clarendon.
(x) Marketing of Canes—(3 Resolutions)

The Acting Secretary was instructed to forward these to the proper authorities.

(xi) *Restriction on importation of Sugar*, it was decided to advise the Clarendon Branches Associated that they propsed deferring this until they knew definitely what the quota was.

GOVERNMENT SAVINGS BANK

(Guaranteed by the Government of Jamaica.)

Deposits and withdrawals may be made at any of the 120 Branches in the Island.

Interest is added half-yearly on the 31st March and the 30th September.

Accounts may be opened with a deposit of 1/-.

The limit of deposits to any one account is £500.

F. D. MACPHAIL,
Manager.

(g) *Letter from Bee Instructor re Rearing of Queens*, was presented The Acting Secretary said he would not advise the rearing of queens in the present location of the apiary.

The Director of Agriculture said people should import queens under permit until we could supply.

It was decided to defer the matter until the apiary was removed.

(h) *Letter from Instructor re shipment of naseberries*, was noted.

(i) *Application from Supervisor Hanson for a typewriter*, was presented. After some discussion it was decided that this could not be granted.

(k) *Letter from Director of Agriculture re Printing Journal.*—It was decided to refer this to the Office Committee who already had the matter under consideration.

The meeting the adjourned until Wednesday, 7th July, 1937, at 11.30 a.m.

BOARD OF MANAGEMENT.

The usual monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the offices of the Society, 10-12 North Parade, Kingston, on Wednesday, 7th July, 1937, at 11.30 a.m. There were present: Hon. Geo. Seymour Seymour, First Vice-President (Chairman); the Acting Director of Agriculture, Mr. F. E. V. Smith; Hon. C. A. Reid; Messrs. Sidney Barton, T. J. Cawley, T. P. V. McDaniel, U. Theo. McKay and D. D. Phillips; Mr. A. P. Hanson, Supervisor of Instructors, and the Acting Secretary, P. St. L. Bacquie.

Confirmation of Minutes of the Previous Meeting.

Copies of the minutes of the previous meeting having been sent to members of the Board, were taken as read, and on the motion of Mr. McDaniel, seconded by Mr. Barton, they were confirmed.

Death of Major W. H. Plant.

Mr. Phillips moved: That the Board place on record their regret at the death of Major W. H. Plant, and that a letter of sympathy be sent his family.

This was seconded by Mr. Cawley and passed with the members standing.

The Acting Secretary advised that a wreath had been sent from the Society. The Board approved of his action.

Mr. Phillips welcomed Mr. F. E. V. Smith as Acting Director of Agriculture and expressed the opinion that Mr. Smith was of great value to Jamaica, as the work he was doing was among the peasantry of the Island, and would add many thousands of pounds to the wealth of the Colony.

The Chairman, in adding his quota to these remarks, said that a resolution had recently been passed in the Legislative Council by which another enterprise of the type which Mr. Smith's Department was handling would be put into operation and would be worked through the Jamaica Agricultural Society by a Committee which was to be set up. The sum of £2,105 had been voted in that direction, and he thought that if they all got together to do everything for the benefit of this marketing industry, it would be a great success.

The Acting Director of Agriculture thanked them for their kind remarks and expressed pleasure at being once more among them. He felt that the work he was doing should bring the Department of Science and Agriculture into closer contact with the Jamaica Agricultural Society. The work they had been doing in the field had brought his Department into very close contact with the Instructors, to the mutual benefit of both organizations and to the small planter. He thought that the new scheme would be an additional means of bringing the two bodies even closer, and he hoped that the good relations between them would continue and increase.

Matters Arising Out Of The Previous Minutes:

(a) *Secretary's Statement*:

The Secretary presented his statement as follows:—

6th July, 1937.

With regard to the new site for the apiary, I had an interview with Mr. P. Martin Cooper, the Chairman of the Water Commission, and he is inclined to let us have a spot, but I must first submit my application to his Board.

All correspondence consequent on the deliberations of the Board at their last meeting has been carried through.

(Sgd.) P. St. L. Bacquie,
Actg. Secretary.

The Chairman said that at the meeting of the Water Commission on Friday last, it had been agreed to rent the Jamaica Agricultural Society a plot of land consisting of two acres at £2 per annum. The Acting Secretary would receive a letter from the Water Commission and arrangements could then be made to take over the land.

Mr. Cawley thought that arrangements should be made right away as queen rearing was one of the chief features, and until they were settled in the new site, nothing could be done in this direction.

(b) *Co-ordination of Agricultural Field Services*: The Secretary presented, for the approval of the Board the following memorandum which he had prepared:

24th June, 1937.

Co-Ordination of Agricultural Field Services.

Following further discussion on the question of co-ordination of the field services of the Department of Agriculture and the Jamaica Agricultural Society, Mr. D. T. Wint's memorandum on the question having been taken with the former findings of the Board, it was finally decided that the Planning Committee be abolished and replaced by an Instructors' Committee, with the Director of Agriculture as Chairman, to have executive authority over the Instructors in regard to field work and to send in reports to the Board of Management for information, this Committee to function for one year, at the end of which the whole matter will be reviewed. The number of the Committee shall be seven, three to form a quorum.

It was decided to submit to the Half-Yearly General Meeting that the matter of salaries be referred to the Instructors' Committee for action.

(Sgd.) P. St. L. Bacquie,
Actg. Secretary.

With reference to the last paragraph, he said he was not quite clear as to what was in Mr. McKay's mind in moving the resolution to that effect.

Mr. McKay explained that as far as he could remember, the discussion arose from Mr. Wint's memorandum and Mr. Cover's resolution that the Instructors should be paid direct by the Government, but he thought that the matter should be referred to the Instructors' Committee to

decide which was the better plan, whether the Instructors should be paid as they were at present, or by the Department of Science and Agriculture.

The Chairman pointed out that neither the resolution nor the amendment had been seconded.

Mr. McKay said they must have been seconded as they had been put to the vote and passed.

The Chairman said he thought they should only bring up the matter of co-ordination at the Half-Yearly Meeting for information.

Mr. McKay said he was not wedded to the matter being referred to the Half-Yearly Meeting, but there was an inclination on the part of some of the members that salaries be paid by the Department of Science and Agriculture.

The Chairman suggested that they should not alter the existing conditions.

Mr. Phillips was of the opinion that if the payment of salaries was taken away from the Board, they would have no control over the Instructors.

Mr. Cawley said if the Half-Yearly Meeting accepted the recommendations which were being put forward now, without Mr. McKay's amendment, Rule 19 would have to be discarded because the Committee would have executive powers.

Mr. McKay moved: That the Board return to the *status quo ante* as far as the payment of Agricultural Instructors is concerned, and that the resolution and amendment that were not seconded be expunged from the minutes.

Mr. Cawley seconded this and it was unanimously agreed to.

The Chairman pointed out that Bye-Law 15, reading as follows, would have to be changed:

"There shall be an Instructors' Committee consisting of the entire membership of the Board, controlling and supervising the work of the Agricultural Instructors.

The Committee shall meet at 10 a.m. on the first Wednesday of each month, unless the Committee by resolution fix otherwise. The Instructors' Committee shall elect its own Chairman."

There was some discussion as to whether these recommendations should be referred to the Half-Yearly Meeting for information or for their approval.

The Chairman said it was a purely domestic matter, and was not in any way altering the constitution of the Society.

Mr. McKay said if it was referred to the Half-Yearly Meeting for approval, there would be interminable discussion. He thought that if the Board of Management was supposed to manage the Society's affairs, the Half-Yearly Meeting should accept what they had done. If they did not agree, when the time came they could elect a new Board.

Mr. Barton was firmly of the opinion that the recommendations should be referred to the Half-Yearly Meeting for their approval.

Mr. McDaniel referred to the minutes of the last Half-Yearly Meeting which stated that nothing should be finally decided on until they had had the views of the coming Half-Yearly Meeting.

The Chairman asked whether they wanted anything done with reference to the alteration of the Bye-Law 15, or not.

Mr. Cawley said the change would be consequential on what took place at the Half-Yearly Meeting.

The Chairman then asked if it was the wish of the Board that a memorandum be prepared setting out the history of what had gone

before and what the Board proposed to do, and that these proposals be submitted to the Half-Yearly General Meeting for confirmation.

This was unanimously agreed to.

Mr. McKay asked what would happen if the Half-Yearly Meeting failed to accept.

The Chairman said things would remain as they were, and that the following resolution which had been passed by the Legislative Council would go by the Board:

AMENDED MOTION IN REGARD TO DEMONSTRATION PLOTS ON LAND SETTLEMENTS.

That with reference to the Message of His Excellency the Governor, No. 21, dated the 16th June, 1937, this Council approves :—

(a) of the expenditure from the provision made for Land Settlement in the Second Instalment of the Loan under Law 22 of 1935 of a sum of £2,105 for the establishment of ten Demonstration Holdings on Land Settlements throughout the Island, and the employment of an Agricultural Instructor to supervise the holdings, and of the advance from General Revenue of such sums as are necessary pending the raising of the Second Instalment of the Loan.

(b) that the scheme shall continue for a period of two years in the first instance, and shall be managed by an Instructors' Committee of the Board of Management of the Jamaica Agricultural Society to be appointed, with the Director of Agriculture as Chairman;

(c) that the question of the disposal of the plots or continuance of the scheme shall be considered and decided by the Legislative Council before the expiration of the two year period; and

(d) that preference be given to ex-students of the Hope Farm School in all cases if such plots are disposed of.

Mr. Cawley suggested that they first put forward the fact that there was no material change.

Mr. McKay said that since no radical change had been made, altering the Constitution of the Society, and all that had been done was a re-arrangement of the Instructors' Committee, he saw no reason why it should have to be confirmed by the Half-Yearly Meeting.

The Chairman pointed out that it had already been decided that the matter was to be referred to the Half-Yearly Meeting for confirmation.

Mr. McKay asked if it was a catch vote, to which the Chairman replied that it had been put to the meeting and nobody had dissented. He would however put to the meeting: That the co-ordination of the agricultural field services, not entailing any change in the Constitution of the Board of Management, the conclusions of the Board be presented in the form of a memorandum to the Half-Yearly Meeting for their information.

He said that was one resolution, and it was open to any member to move an amendment that it be submitted to the Half-Yearly Meeting for confirmation.

Mr. Cawley moved: That the resolution as set out be accepted by the Board and the recommendations in relation to the co-ordination of agricultural field services be passed on to the Half-Yearly General Meeting for their information.

Mr. McKay seconded this.

Mr. Barton moved: That the recommendations be referred to the Half-Yearly Meeting for their approval.

There was no seconder to Mr. Barton's resolution.

Mr. Cawley's motion, seconded by Mr. McKay, was put to the vote and carried.

The Chairman then gave notice that at the next meeting of the Board of Management he would move that Bye-Law 15 be struck out and substituted therefor Mr. Cawley's motion which was carried at the last meeting of the Board setting up a Committee.

(b) *Building of New Store*: The Acting Secretary read memorandum as follows:—

22nd June, 1937.

To the Board of Management:

Now that the question of adding another store on the premises here is under discussion, I beg to call attention to certain matters in connection with the stores generally.

To begin with, those already completed are not suitable for our stocks as there is not nearly enough ventilation and something will have to be done to correct this as the intense heat which occurs when they are closed, tends to spoil the grain, potatoes, etc. It is bad enough when they are closed overnight, but over week ends and public holidays, it is much worse, and besides the bad effect this heat has on the stock, it is also conducive to the breeding of weevils, worms, etc.

In respect to the new store to be built, I suggest that while it might not be necessary to alter the whole plan, provision should be made for replacing portions of the dead concrete walls with iron bars which could be shuttered in case of heavy rain storms.

I am further suggesting that the whole arrangement of this store be gone into as I think money could be saved, and it really should not cost £450. To begin with, the concrete floor at the lower end is in perfect condition and should be allowed to remain, particularly as our new mill is already installed there and the digging away of its concrete foundation may cause damage to it.

We need our drying trays badly, and I am suggesting that these be placed at the north end of this store; this would use up about 10 ft. of it and the trays would be made to slide in and out towards the north where there is yard room.

With respect to better ventilation of the completed stores, I suggest that thought be given to the use of iron bars as already stated.

(Sgd.) P. St. L. Bacquie,
Actg. Secretary.

The Chairman said the Acting Secretary had brought the matter to his attention and he quite agreed that the buildings were unsuitable

Mr. McKay said if this was the case there was some incompetence somewhere, and wanted to know what guarantee they would have that the work would be competently carried through on this occasion. On his suggestion it was decided that the Senior Vice-President and Mr. Cawley form a Committee to go into the matter and that they be held responsible.

The Chairman said that the Acting Secretary had got in touch with the Director of Public Works, asking him to send a responsible officer from his Department to meet the contractor with a view to putting the work in hand.

Statement of Accounts.

(a) *Statement for May*: The Acting Secretary said this had appeared in the Minutes.

(b) *Statement for June* was also presented.

USEFUL BOOKS FOR FARMERS

Principles of Veterinary Science—Hadley	...	...	22/-
Types and Breeds of Farm Animals—Plumb	...	...	22/-
Equipment for the Farm and Farmstead—Ramsower		...	20/-
Poultry Breeding and Management—Dryden	...	...	13/-
Principles of Agriculture—Bailey	...	...	10/6

The Bright Yellow Book Store, Church and Tower Sts., Kingston,

— *Best place in Jamaica for* —

School Books, Birthday Cards, Office Stationery and Printing.

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E. H. M. Campbell ——— Managing Director

Questions:

Mr. McKay asked what steps had been taken with reference to his resolution regarding fertilizers which had been passed at the previous meeting.

The Acting Secretary replied that the draft of the form called for had been referred to the Director of Agriculture, and the matter would subsequently be referred to the new Instructors' Committee.

Half-Yearly Meeting:

The Acting Secretary reported that the minutes of the last meeting were not quite ready, the delay having been caused through the proof of His Excellency's speech being sent to him for approval.

Mr. Cawley moved: That in future, draft of His Excellency's speech be forwarded to him for his approval immediately after the Half-Yearly Meeting.

The Chairman seconded this and it was carried.

A Committee consisting of the First Vice-President, Messrs. Barton and Cawley and the Acting Secretary was then appointed to consider the agenda and other matters relating to the Half-Yearly Meeting.

Resolutions:

(a) *Mr. T. J. Cawley re re-adjustment of Finances of Seeds Department*: The following was presented:

That at the end of the June Quarter of this year a complete stock-taking of the Seed Department of this Society be taken and the cost of the several members of the Office Staff who assist in whole or part be offset against any profit so ascertained.

Mr. Cawley, in speaking on the resolution, said that although the Seeds Department showed a large profit each year it was not the actual profits, as the salaries of the clerks whose services were used in that Department were not charged to it.

Mr. Reid seconded the resolution.

The Acting Secretary presented a statement showing the true state of affairs, as follows:—

COMMENTS ON THE PROPOSAL FOR RE ALLOTMENT OF SEEDS DEPARTMENT FUNDS.

This is in effect a recapitulation of previously published facts appearing in the Auditor's Reports on our Annual Statements.

Prior to 1930 the Books were kept on lines laid down by Government, and there was no separation of the Seeds Department Funds, and the Official Funds. In those days we used to render greater assistance to Agricultural Shows by allowing them a grant of 10 per cent. of their Prize Money, some of which came out of the Seeds Department Funds.

AUDITOR'S REPORT:

1929-1930. This Report points out that in 1928-29 the Seeds Department made net profits of £642 17s. 7d. which increased the surplus in this Department to £1,493 5s. 9d. at the close of the year 31st March, 1930, showing that there was only £851 surplus to 31.3.28.

AUDITOR'S REPORT:

1930-31. The Seeds Department made a profit of £221 1s. 2d. during this year, increasing the surplus to £1,689 6s. 11d. £25 was granted from the Seeds Department for Experiments.

AUDITOR'S REPORT:

1931-32. The Seeds Department Profits this year were £234 12s. 5d., although the half salary of the Assistant Secretary, amounting to £150 was charged to the Trading Account.

AUDITOR'S REPORT :
1932-33. From this year the work and profits of the Seeds Department began to increase rapidly and profits amounted to £496 2s. 8d., from which £221 5s. 0d. was transferred to the Official Account and expended.

AUDITOR'S REPORT :
1933-34. Profits this year amounted to £818 16s. 9d. From the total surplus a sum of £1,030 4s. 10d. was transferred to Official Account and used in paying salaries and other expenses.

AUDITOR'S REPORT :
1934-35. Profits earned amounted to £769 19s. 4d. The whole of this amount and an additional sum to make up £867 2s. 2d. was transferred to the Official Account. This amount helped to pay salaries, etc.

AUDITOR'S REPORT :
1935-36. The profits this year were £1,200 1s. 1d., of which £984 4s. 2d. was spent on the official transactions (Salaries, Experiments, etc.)

AUDITOR'S REPORT :
1936-37. Of the profits made which amounted to £946 19s. 8d., a sum of £784 17s. was used up in the Official Account.

SUMMARY.

As an example of how the Seeds Department sales have increased, it may be observed that in 1925-26 Vegetable Seeds sold amounted to £82 8s. 1d., while in 1935-36 we sold £1,203 6s. 1d. In 1936-37 we sold £1,011 2s. 0d. This refers only to Vegetable Seeds.

Seed Potatoes sales in 1926 were £608 11s. 0d.

In 1936-37 these increased to £1,908 8s. 10d.

Reference has been made to the system followed in the Department of Agriculture at Hope Stock Farm.

During 1930-31 the Director of Agriculture made important suggestions, based on the system followed at Hope and Grove Place (see page 374 Sept. 1931 Journal), which the Board readily agreed to. The present comparison has been made because it was felt that the Department's operations at the Stock Farm provided a good guide.

After discussion the meeting came to the conclusion that there was nothing to be gained by making a change, but rather that it might be a means of the Government reducing the grant.

Mr. Cawley's motion was then put to the vote and lost.

The meeting then adjourned until 2.15.

On the resumption there were present: Hon. Geo. Seymour Seymour, O.B.E., First Vice-President (Chairman); the Acting Director of Agriculture, Hon. C. A. Reid, Messrs. Sidney Barton, T. J. Cawley, T. P. V. McDaniel, U. Theo. McKay and D. D. Phillips; the Supervisor of Instructors, Mr. A. P. Hanson, and the Acting Secretary, P. St. L. Bacquie.

Meeting of Members of Show Committee with His Excellency the Governor: The Chairman said that the members of the Show Committee had been summoned to a meeting at King's House on Monday, 5th June at 9.15 a.m. He read a memorandum from His Excellency, who desired that the matter be brought up at the Half-Yearly Meeting.

The memorandum is as follows:—

A meeting was held at King's House this morning, at which the Governor presided, attended by members of the Committee who had been dealing with a proposal to hold an All-Island Agricultural Show.

The Director of Agriculture and Mr. F. E. V. Smith, the Hon. G. Seymour Seymour, the Rev. W. J. Thompson, the Trade Commissioner, Mr. Pickthall, Mr. Harper Watson and Mr. Bacquie, Acting Secretary of the Jamaica Agricultural Society were present.

The Governor strongly emphasized the value and importance of an All-Island Exhibition, to be held next year during the Tourist Season. He pointed out the

urgency of a decision being reached and explained that he had called the meeting together at short notice as Mr. Barnes was leaving for England on the following day, and the Half-Yearly Meeting of the Jamaica Agricultural Society would be held this month when the whole question might be further ventilated.

The Governor stated that he was most anxious to afford the opportunity to the Jamaica Agricultural Society to assist in the organization of an Exhibition which would be a credit to the Colony, and he felt sure that it was only necessary to appeal to all the Branch Societies to assist to ensure exhibits being obtained from all parts of the Colony. While it was in no way intended that this meeting should come to decisions, he thought there were several points which might be discussed at once and which could be followed up with further investigation when the proposal had further matured.

A discussion then ensued on the various points detailed below :—

1. It was agreed that a *date* in February, preferably one on which a Tourist ship was visiting the Colony, should be selected.

2. That the Exhibition should be held in Kingston, as affording the best centre for the whole Colony, and where a large gate should be secured.

Various *sites* were discussed, and after the meeting, those present visited, with the Governor, the Mona Pastures where it was thought that a suitable site might be secured, which could be made into a permanent Show Ground.

It was considered advisable that a site should be specially reserved for this purpose on which work could be done for some weeks before the Exhibition, which would be an objection to utilizing grounds ordinarily occupied for other purposes.

After visiting Mona it was agreed that the Agricultural Officers should get out further particulars with regard to cost of fencing, levelling, clearing, etc., before any definite decision with regard to a site was reached.

3. As regards *Buildings*, Mr. Barnes was requested to make enquiries in England as to the possibilities of securing Iron Sheds, etc., which could be obtained on a Hire-Purchase System, such sheds being used in England and elsewhere for Exhibitions of this description.

4. It was agreed that an Officer of the Agricultural Department should be seconded for three or four months before the Exhibition as an *Organizing Secretary*, to devote his whole time to such organization, in conjunction with the Acting Secretary of the Agricultural Society and any other additional Secretaries who might be appointed. It was suggested that Mr. Howe, Principal of the Hope Farm School, should be the Organizing Secretary. The British Trade Commissioner undertook that he and his Office would give any assistance possible.

5. As regards *Finance*, it was agreed that when more detailed estimates were available, proposals should be made by Government with regard to providing a sum for the initial expenditure, which could be advanced, either as a loan, interest being met from any profits, etc., at the Show, or form part of a revolving fund to be utilized for buildings, equipment, etc., for this and any subsequent Exhibitions. It would be necessary to appoint a Finance Committee, of which the Treasurer should be a member, to deal with this question.

6. *Seeds.*—It was agreed that steps should be taken to encourage purchasers of Seeds at the Agricultural Depot to exhibit results at the All-Island Show, prizes being awarded to those who secured the most successful results.

7. A *Prize Fund* should be formed as soon as possible, and appeals made for contributions towards it.

Mr. Barnes undertook to interest firms and others in England.

It was felt that it was advisable not to have the Show on a Public Holiday when there were other attractions in Kingston, but if possible to hold it on a Friday or Saturday, decision to be reached later as to whether the Exhibition should be opened at night.

5th July, 1937.

During the reading of the memorandum Mr. Reid entered.

There was some discussion on this subject, some of the members not being in agreement that a Show of the size proposed could be carried through successfully at such short notice.

Mr. McDaniel and Mr. Phillips joined the meeting during the discussion.

As a result, the following motions were put by the Chairman :—

That an All-Island Exhibition be held between the 1st February and the 31st March, 1938, the month and date to be fixed by a Committee.

This was seconded by Mr. Phillips and passed.

That a Committee be appointed to manage the All-Island Exhibition to be held in 1938, such Committee to make all the necessary arrange-

ments with regard to site, Prize Lists, etc., in collaboration with the Department of Science and Agriculture, and to have power to add to their numbers from persons outside.

Mr. Cawley seconded this and it was carried.

That this Board also set up a Finance Committee to deal with all matters relating to the finances of this All-Island Exhibition with the Island Treasurer as Chairman.

Mr. Cawley seconded this and it was carried.

The Managing Committee was appointed as follows:—The Director of Agriculture, the British Trade Commissioner, the Canadian Trade Commissioner, the Development and Marketing Officer, Hons. Geo. Seymour Seymour, O.B.E., E. A. McNeil and C. A. Reid; Rev. W. J. Thompson, Messrs. Sidney Barton, T. J. Cawley, U. Theo. McKay, W. Harper Watson, D. T. Wint, with Mr. J. W. Howe, Headmaster of the Farm School, and the Secretary of the Jamaica Agricultural Society, joint Secretaries.

The members were asked to submit to the Secretary names of suitable persons who could then be asked to serve on the Committee.

The Finance Committee was appointed as follows: The Island Treasurer, Chairman; the Director of Agriculture, Hon. Geo. Seymour Seymour, Mr. T. J. Cawley, and the First Vice-President *ex officio*.

Resolution by Mr. U. Theo. McKay re Instructors' Increments: The following was presented:—

Resolved: That steps be taken by the Instructors' Committee to make such arrangements as will enable the Instructors to be paid their increments as from the 1st of April last, such increments to be paid on the basis of the Cover's Resolution.

Speaking on this resolution, Mr. McKay said that as the Acting Secretary was drawing the Secretary's salary, there was a saving at the rate of £600 per annum on the Supervisor's salary. He thought that a portion of this saving might be allocated to the Instructors, with the understanding that this increment was of a temporary nature, though the Board would do what they could to make it permanent.

Mr. Cawley seconded the motion.

The Chairman said that before anything could be done in this direction they would have to rescind the resolution passed some time ago to the effect that no increases were to be given to Instructors.

Mr. McKay moved the suspension of the Standing Orders in order to move the rescinding of the resolution referred to.

Mr. Phillips objected.

There being no seconder, the matter was not carried any further.

Resolution by Mr. U. Theo. McKay re Importation by Government of Goats of Milking strain: The following was presented:—

Whereas: The Goat is comparatively free of Tuberculosis:

Whereas: It has been demonstrated that its milk is an ideal food for children as well as for invalids:

Whereas: The Government has been interesting itself in the physical well-being of the inhabitants (see the setting up of a Nutrition Committee):

Be it Resolved that the Government takes steps through the Department of Science and Agriculture to import goats of a good milking strain so as to improve the quantity and quality of goats' milk throughout the Island.

Mr. Phillips seconded this and it was passed, several members speaking in support.

Communications.

(a) *Letter from Mr. W. Quintin Williams covering advertisement of his Canning Factory* was presented. The Acting Secretary pointed out that the project being advertised was not an accomplished fact, and when people saw it advertised in the Society's Journal, they would come to the conclusion that it was encouraging them to take shares, and he therefore would not take the responsibility of inserting it without the sanction of the Board.

The Board saw no reason why it should not be accepted as it was quite in order.

(b) *Letter from Hon. C. A .Reid re appointment of Mr. Heron as Bee Inspector*: The Acting Secretary read the following:—

Christiana,
22nd June, 1937.

In view of the smallness of the salary of the Bee Instructor, and of the capability of the Officer, and in view of the remarks made by the Hon. Director of Agriculture during the consideration of the Estimates of the Department of Science and Agriculture, viz. :—That if the Board of Management is agreeable, he would be quite prepared to recommend him as being a fit and proper person to be appointed as Bee Inspector, would you kindly place the matter before the Board of Management at the next meeting, with a view of arriving at a decision as to whether the Board is willing to adopt the suggestion that the Bee Instructor be appointed Bee Inspector, and if so to make the necessary arrangement for the appointment.

Yours truly,
(Sgd.) CHAS. A. REID.

This was unanimously agreed to, Messrs. Cawley, McKay, Barton and Phillips speaking in support.

(c) *Letter from C.S.O. re cultivation and illicit sale of Ganja*: C.S.O. Letter No. 3000/34, dated 25th June, 1937, asking that the Field Officers of the Society keep a sharp lookout for ganja plants and notify the Police whenever detected, was presented.

The Acting Secretary was directed to instruct the Field Staff accordingly.

(d) *Application from an Instructor for a loan of* £50 was presented.

Mr. McKay moved that this be granted on the terms of his letter, provided it did not interfere with the funds of the Society and that the sureties were approved by the First Vice-President and the Acting Secretary.

Mr. Cawley seconded this and it was carried.

(e) *Letter from Mr. T. H. Beecher asking for support in compiling the "Encyclopaedia of the West Indies"* was presented, but the Board decided that the request could not be entertained.

Reports from Committees.

(a) *Instructors*: The Acting Secretary presented report as follows:—

7th July, 1937.

Your Instructors' Committee met this morning and beg to report that with regard to the matter of extra travelling for Instructors Henderson and Jones that the matter be left over until definite arrangements have been arrived at with regard to the co-ordination of the Agricultural Field Staff, and that in the meantime these Instructors will carry on as at present.

2. With regard to the matter of a Foreman for Kellitts District that that matter be referred to the Instructors' Committee to be appointed in the place of the Planning Committee.

3. With reference to the request from Rev. McKenzie that Instructor Kelly be a visitor of Kentucky School, this application was not entertained, and the Acting Secretary was instructed to inform Mr. Kelly of this.

4. With reference to the application for leave from Instructor G. R. Graham, the Acting Secretary was instructed to arrange this matter between himself and the Supervisor.

5. *Applications for Affiliation.* The following Branches were recommended for affiliation :—

Golden Grove (St. Thomas.)
Arthur's Seat (Clarendon.)
Elgin (Clarendon.)
Trelawny Branches Associated.
Milk River (Clarendon.)

6. With reference to the application by Instructor Lynch for help with vegetables, etc., it was decided that the matter be referred to the new Instructors' Committee.

7. With reference to the supply of Budwood for Mr. Byles, it was decided that a sum of £10 be set aside for this purpose and that Mr. Byles be instructed to purchase budwood not exceeding £10 from recognized planters; and that the matter of not being able to get budwood be referred to the Director of Agriculture.

(Sgd.) GEO. SEYMOUR SEYMOUR,
Chairman.
(Sgd.) P. ST. L. BACQUIE,
Actg. Secretary.

On the motion of the Chairman, seconded by Mr. McDaniel, this was adopted.

(b) *Office*: The Acting Secretary presented report as follows:—

7th June, 1937.

The Office Committee met this morning, and I beg to report that it was decided that with regard to the printing of the Journal, the matter of Reports, etc., would receive attention with regard to reducing their volume, but with regard to the Minutes of Half-Yearly Meetings, it would be impracticable to do so.

(Sgd.) G. SEYMOUR SEYMOUR,
Chairman.
(Sgd.) P. ST. L. BACQUIE,
Actg. Secretary.

On the motion of the Chairman, seconded by Mr. McDaniel, this was adopted.

Diseases of Plants and Animals: *Insect Pests*:

(a) Panama Disease of Bananas—Report for April, 1937, was laid on the table. The Acting Secretary said that copies of this had been sent to the members of the Board.

Report by Supervisor Hanson on Red Peas Experimental Plot at Temple Hall was laid on the table.

Authorised Persons:

(a) *Return of Arrests for Quarter Ending 31st March*, 1937, was presented and the Secretary was instructed to publish a summary in the Journal.

The following resolutions were presented:

(a) *St. Elizabeth Branches Associated re*:
- (i) Marketing of Corn.
- (ii) Additions to Schedule of Authorised Persons Law.
- (iii) Land Settlement—Warminster.
- (iv) Tobacco Industry.

(b) *St. Ann Branches Associated re*:
- (i) Land Settlement—Thatchfield.
- (ii) Storage of Grain.
- (iii) Price of Seed Potatoes.

(c) *Westmoreland Branches Associated*:
(i) Government Infant School for Strawberry.
(ii) Westmoreland as Tourist Resort.
(iii) Acreage under Cane.

(d) *Hanover Branches Associated*:
(i) Revision of Rule 5.
(ii) Land Settlement—New Mills.
(iii) Establishment of Low Temperature and Marketing Station at Montego Bay.

(e) *Buxton Town* re Demonstration Plot.

(f) *Wakefield (Trelawny)* re:
(i) Establishment of Government Savings Bank at Wakefield Post Office.
(ii) Tobacco Industry.

(g) *Williamsfield*:
(i) Road—(2 resolutions).
(ii) Compulsory Education for Williamsfield.
(iii) Culvert.

(h) *Resolutions from Trelawny Branches Associated* re:
(i) Development of minor industries in Eastern Lower Trelawny.
(ii) Marketing of Corn.
(iii) Completion of Troy-Pantrepant Road.

(i) *Glengoffe Branch re Improvement of Main Road* from Lawrence Tavern to Glengoffe.

(j) *New Green Branch* re Halt at Grove Place.

(k) *Balcarres Branch* re Justice of the Peace.

(l) *St. Andrew Branches Associated* re:
(i) School for Rock Hall.
(ii) Roads—(3 resolutions).
(iii) Post Office for Red Light, Irish Town, etc.
(iv) Agricultural Headmen.
(v) Justice of the Peace.
(vi) Country Fires Law.
(vii) Budded Citrus Plants.

(m) *St. Mary Branches Associated* re:
(i) Registrar Office for Camberwell.
(ii) Bridge across Jack's River at Riversdale Fording.
(iii) Asphalting of Road from Jack's River to Oracabessa.
(iv) Post Office for Jack's River.
(v) Land Settlement—(3 resolutions).
(vi) Agricultural Headman for St. Mary.

The Acting Secretary was instructed to forward these to the proper authorities.

New Members:

On the motion of the Chairman, seconded by Mr. Reid, the following were elected to membership:—

E. L. Silvera—Russell Hall, Pembroke Hall.
W. S. Robinson—Pembroke Hall.
C. G. Chevannes—Pembroke Hall.
O. W. Champagnie—Russell Hall, Pembroke Hall.
Lester Donald Marsh—Retreat.
T. M. Dixon—Retreat.
A. C. Marsh—Retreat.
E. Bubb Clarke—Dove Cot, Halfway Tree.
H. G. Gauntlett—31 Brentford Road, Cross Roads.
Mrs. Grace Emery—Reading.
C. A. Crearer—c/o Messrs. Ewan D. Macdougall, Kingston.
J. M. Coke—Christiana.
O. C. Scott—3 Burke Road, Spanish Town.

Other Business:

(a) *Application from Acting Secretary for out-of-pocket expenses*, was presented. It was decided that he draw the Secretary's salary of £550, as appeared on the Estimates, and £100 per annum computed travelling allowance.

(b) *Acting Secretary's Report on his travelling for June* was presented.

(c) *Application from Miss Hilton for three months salary in advance* was presented. It was decided that this should be paid to her month by month, and as directed by her.

(m) *Telegram from Instructor Thompson re over-production of bananas* was laid on the table.

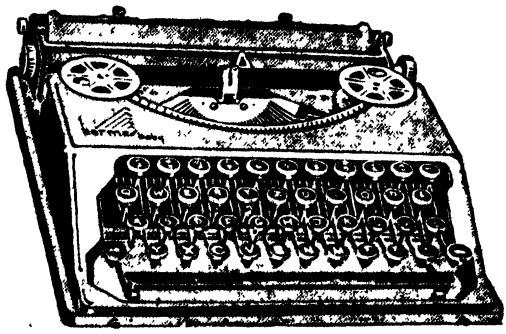
The meeting then adjourned until 11.30 a.m. on Wednesday, 4th August, 1937.

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I. A.

OBITUARY.

SIR ELIOT DePASS: K.B.E.

We cannot allow the passing of such an inestimable friend of Jamaica as Sir Eliot DePass, K.B.E., President of the West India Committee, to take place without placing on record the high regard in which he was held among the members of this Society. The news of his death in London on the 11th June, was received here with a pang of regret by all who knew of him and were able to appreciate his valuable work in many directions for the benefit of this Colony.

His life was, to a great extent, devoted to the welfare of the West Indies as a whole, particularly Jamaica which will long be remembered with deep appreciation among all classes.

We join with other sections of the Press in offering condolence to his bereaved relatives.

HAROLD COCKING.

It is with deep regret that we record the passing of an old Member and very true friend of the Society in the person of Mr. Harold Cocking. The sad event took place in Kingston on the 20th June, after a short illness.

Of unassuming manner, Mr. Cocking will be remembered in the country parts for the great interest he took in Agricultural Shows, held throughout the Island, rendering very valuable assistance—voluntarily, which very often made all the difference to the finances.

His association with the Society as a Member and strong supporter over a long number of years, has been a very pleasurable one, and his loss will be very keenly felt.

To his sorrowing relatives, we tender our deepest condolence.

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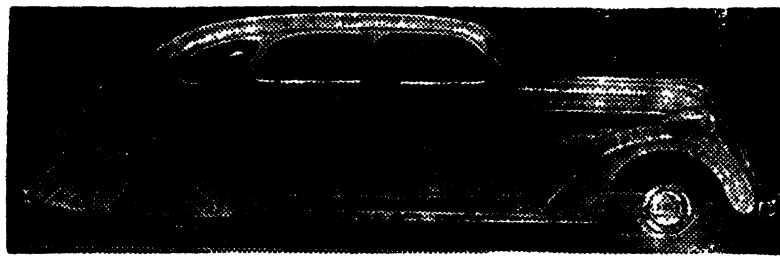
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CULTIVATION AND MARKETING OF IRISH POTATOES IN JAMAICA.

ADDRESS DELIVERED BY MR. ERIC WHITBREAD AT CONFERENCE OF ST. ANN BRANCHES ASSOCIATED OF J.A.S.

To begin a talk on the cultivation and marketing of Irish Potatoes in Jamaica it seems logical that the first subject to be dealt with should be that of seed. And I would like to emphasise that not only is it the first but one of the most important subjects. For just as none of you here would select a heifer calf from a poor yielding cow to raise as a milker, so it is equally foolish to try to raise a crop of Potatoes from the seed of inferior stock and which has suffered from disease during growth.

Fortunately, here in Jamaica you are to a large extent protected by Government regulations regarding the importation of seed; for only stock certified in the country in which it is grown is allowed to be landed here for planting purposes. All of you who have planted seed potatoes from Canada will have noticed a white or coloured label attached to the barrel, saying that the contents of the barrel have been certified by the Canadian Agricultural authorities. But probably few of you realize the extreme care that the grower must exercise to enable him to obtain this label on his barrels of seed.

"First of all, he must select his parent stock very carefully from a field that has good vigorous growth and is free, or practically free, from what are known as virus diseases. These diseases are the bug bear of the seed grower, for at various times and in various countries they have almost wiped out the profitable growing of potatoes. There is a number of types of these diseases and in every case they cause a rapid degeneration in potato stocks. In fact, a century ago in Germany, before these mysterious virus became known, yields began to get less and less, although the crops were well cultivated and manured, and they put it down to what they called a "Degeneration Disease," thinking that the ground was potato sick. So they commenced to grow on fresh soil but, to their dismay, they found that still their crop was only half what it should have been. Then scientists got to work and discovered these viruses which had infected the plants and found also that one sick plant transmitted the disease to others, and that in some cases small insects carried the diseases about a field. The infected plants themselves showed poor stunted growth, with often crinkling and curly leaves.

"Now, the modern seed-grower has still to fight these diseases, for if he is to be allowed to sell his seed potatoes as "certified" his fields must show only a very, very small percentage of these virus infected plants. So to get clean fields he commences as soon as his crop is half-grown to pull out, or "rogue" as it is known, all plants that look off-type or show any undesirable features. This, you will realize, is a very exacting job and needs very great care, for sometimes one quarter of a field, or more, has to be destroyed. Government Inspectors walk over the fields at regular intervals to see that this is done, and also to watch for the more common diseases, such as late blight which also goes as a black mark against the grower. Finally his crop is reaped, and again he is subjected to inspection in the packing house, which prevents badly shaped, cut or scabby tubers being included in the seed.

"Thus you will see when you receive your seed-potatoes from Canada or Great Britain, they are just about as good as it is possible to get, and

I'm quite sure the seed-growers in those places say they cost more to produce than you are paying for them.

"Now this concludes the case for Imported Seed, and you will see that it is certain that if you plant in Jamaica with imported seed, you are getting fairly good stuff, and I know that people like the Agricultural Society, who import so much, satisfy themselves that in addition to being certified as required by law, their seed comes from districts in Canada or Scotland or England which have a reputation for good hardy stock. There is then the question of once grown local seed which sometimes is planted in Jamaica; usually I have found because at times imported seed is hard, or impossible, to get at the time it is needed for planting.

"Some of you possibly have planted such seed, and probably have had good results, which has made you wonder why all this fuss is made about importing seed. But you would find if you attempted to raise several generations that you would quickly be in the same position as the people in Germany I mentioned earlier; for in warm countries, or even in the Southern parts of temperate countries, stock soon deteriorates and it needs a cold, bracing climate to grow hardy seed. For these virus diseases, about which I have talked, are usually present in a potato crop in Jamaica, but owing to the shortness of the growing season they are what is known as "masked" or not distinguishable as easily as in cold countries.

"So my advice to you if you wish, or have, to plant once-grown seed, is this: Do not wait until the season is over and then casually go along and buy some from a man's barn, or a higgler who comes along the road. But see the stuff actually growing in the field and pick it from a free-growing, well topped field, which has not blighted down and which you know will give a good average yield.

"So much for seed. And now we come to a suitable location on which to plant. Personally, I would select the best piece of land on your farm or holding. For potatoes are an expensive crop to grow, and as little risk of failure as possible should be taken. Good deep land in gullies usually seem to yield the best crops in this district, but care should be taken that the land is not liable to wash in any ordinary season. Also a location that gets the morning sun is very desirable, as it is less liable to go down with early blight than one which is shaded until late in the morning. Seed should be planted whole, if small, and cut, if large. It seems a mistake to plant too large seed or set pieces in Jamaica, for in these red soils the seed keep remarkably well. As regards cutting the seed on the same day to planting or on the previous day, there are divided opinions about this. For my part I have planted both and could see no difference in the results. Probably if wet weather is expected, it is better to cut the day previous to planting and let the sets scab over, or even dust lightly with sulphur which is a preventative against wet getting in and setting up a rot.

"While dealing with planting the seed we have also to consider fertilizers. For it is certain that few crops respond to fertilizers like potatoes. And, as you probably know, their chief need is organic manures. Now doubtlessly the best means of supplying organic matters is by stable manures, and wherever possible, I would recommend a good coating of this material ploughed or dug in a few weeks previous to planting. Alternatives to this, if no stable manure is available, is the ploughing in of a green manure crop such as cow-peas, or any native beans. This organic fertilizer is very necessary in Jamaica, for without it any application of real artificial, or inorganic, fertilizer

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will lose half its value, and if the weather is wet, will leach at an altogether unprofitable rate. These artificial fertilizers are of various kinds, supplying nitrogen, phosphate, and potash. A lot of the ready-mixed manures supplied nowadays have a certain amount of organic material in their make-up, and probably the best of these to use on the Jamaica hill soils is fish manure, which is usually made up as a 4-8-8 mixture, and contains 80 lbs. of nitrogen, 160 lbs. of phosphorus and 160 lbs. of potash per ton. Other good mixed fertilizers with an organic base are those containing cotton-seed, which we have used exclusively this year, and another containing castor pumace. Both of these are somewhat quicker acting than fish manure, which is an advantage in such a short crop as Potatoes.

"The rate of application and time of application, must vary according to individual fields and the weather conditions during the growing period. About 6 to 8 cwt. per acre of a 4-8-8 or 4-10-10 seems to give best results on Jamaican red soil, and as the growing season here usually coincides with wet weather, I have found it advisable to use half at planting time and the remainder at the first hilling up after the crop is through. If heavy rains come during the growing period a side dressing of about 200 lbs. of a purely nitrogenous manure such as Sulphate of ammonia or nitrate of soda may be necessary; that is, if the plants seem to stop growth and look sickly with the wet. In fact, the whole principle of manuring is one of common sense, and no text book can teach it. First, get humus into the soil by stable or green manure to act as a conditioner, and serve the double purpose of keeping the land well-drained in wet weather and moist in dry weather, which it does, strange as it may sound, and then start from 6 to 8 cwts. of a good mixture per acre, and watch results. Try out less or more on various pieces and don't be too quick to jump to conclusions, for all reliable fertilizer trials are spread over a period of years, during which different seasons and conditions are contended with. And always remember that it is very easy to throw money away with artificial fertlizers; either by using too little or too much. For there is no royal road to big crops; they do not come out of bags of fertilizer alone, or even by using the very best seed; but usually they come by a combination of these two, plus some good seasonable weather, which is more important really than the other two put together.

"The actual cultivation of a potato crop is comparatively simple, and yet close attention is needed. Plough or fork your land deeply and get a good fine tilth right to the bottom of your furrow or spit. This is most important, for it can be truly said that the chief cultivation of a potato crop are made before the crop is ever planted. Plant fairly shallow and hill up well. Then as soon as the crop shows through, hill again and continue to hill and cultivate as often as possible until the plants get as big as the inside of your hat; then it is time to stop for you may cut the root fibres. In any case keep a watch during your cultivating for these root fibres and see that you are not cutting them with your implements even in the early stages of the crop. For too much cultivation can be more harmful than too little if you are disturbing the root system. And in Jamaica, during seasonable weather, the growth of potatoes is very rapid and it is easy to continue cultivating too late.

"On the actual digging of the crop I will not attempt to advise you, for if you get a good crop this is the pleasantest part of the whole job. The only advice I will give you is that if you are digging with a fork watch that your men do not stick the tubers but make them keep well to one side. And if you have a man who persists in sticking the

potatoes as he lifts them, and you are too kind-hearted to sack him, then give him his day's pay to sit under a bush and watch the others, for it will be more profitable for you in the end.

"Perhaps I have been too quick to dig this crop of potatoes before mentioning diseases and their control. So we will go back to the potato growers greatest enemy—blight.

"The real potato blight, or late blight, as it is called, is probably only found in Jamaica at altitudes over 1,600 feet or so, and then, I imagine, not in such a bad form or so frequently as in colder countries. The most common blight I have found in Jamaica is early blight which attacks the plants at about six weeks old and causes them to dry down prematurely. Ordinary Bordeaux spray is the best preventative for late blight, and most of the best textbooks will tell you for early blight also. But I rather disagree about the latter, for I have sprayed crops well in Jamaica and still find that early blight will get in. In fact this latter disease is very hard to control, and it seems that weather conditions play a greater part in its control than spray does. By this I am not advising you not to spray; this is very necessary, and it can be used also as a safeguard against caterpillars which will soon run through a crop, which can be checked by the use of 6 to 8 lbs. of calcium arsenate or arsenate of lead to each 100 gallons of Bordeaux. But it always seems to me a pity that we have to spray at all, as one spraying makes the crop, more or less, an artificially grown one. For spray, like rain, descends on the just as well as the unjust, and kills any growths or insects that are healthful to plants as well as those that are harmful.

It does often seem that a lot of plant disease troubles, and especially in potatoes, are caused not so much by Providence but rather by the use of poor seed and inefficient cultivation, and which results in a weak plant with no resistance to diseases. Climatic conditions, of course, cannot always be withstood, but even then the better the farmer, the less he suffers, as a rule.

"To return to actual spraying, it is best to start when the plants are about five or six inches high and to continue going over them again as fresh growth appears. And then, of course, there is spraying *and* spraying With a large power sprayer such as we use, the plants cannot help but get a good covering; but with a small hand sprayer, great care should be taken to see that each plant gets a good coat. I remember once being at a rather big fire, and several barns and a number of hayricks were flaming. Two fire engines were there pumping water on the blaze, but I noticed one fireman who was playing his hose onto a barn, and instead of bearing directly onto the roof, three-quarters or more of the water was going right over it and into a field on the other side. Thinking that he might have bad eye-sight I ventured to point this out to him. But it didn't seem to worry him much for he replied, 'Oh that's alright. I'm getting rid of the water, anyway.' Well it's hardly good enough just to 'get rid of the spray' if you are spraying a potato field.

"Now I think this is all I can tell you about growing the crop, or rather, all that time will permit. And I cannot help feeling that some of you here who have been growing potatoes for a number of years in Jamaica probably learnt all that I have told you a long time ago, and could really tell me a lot that I don't know myself. For the longer I am in Jamaica the less I feel I know and the more I realise there is to learn. For in England they always say that even if a good farmer lives to an old age he is just beginning to know something when he dies; and

I'm sure the same applies to Jamaica where, in a very small radius, one can find such a number of different soils.

"But now follows the hardest part of my talk. For your secretary, when he so kindly invited me to address you to-day, asked me to speak also on the marketing of potatoes and the advisability of growing this crop on a large scale.

"Years ago, it used to be said that the man who could make two blades of grass grow where one had grown before, was a benefactor to mankind. But to-day, the farmer and planter is more concerned with selling his first 'blade' than with growing his second. And this also applies to the potato grower, and even more so to the grower of what are known on British and American markets as 'new' potatoes. For to plant on a large scale in Jamaica it is necessary to have an outside market. And to illustrate the competition which one is up against, I will quote the case of Bermuda where I lived for seven years before coming here. Twenty or thirty years ago, this Colony grew and exported to New York around half a million barrels of potatoes yearly. Prices were generally good, and planters there, if they did not become millionaires at least they kept well clear of the poor house. Then it was discovered that potatoes would grow well in some of the Southern States of America during the winter, and supplies could be shipped to New York at the same time that the Bermudas arrived. This naturally did not help the sale of the latter, but they still held their own as they had a wonderful name for quality. Then later the U.S. Government, acting on the principle that charity started at home, put a rather heavy duty on Bermuda potatoes to help their growers in Florida and Carolina, and this affected the Bermudas so that to-day they only ship very small quantities to New York and then only when the market is suffering from lack of supplies from the former places by reasons of some climatic

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disturbances down there. Now all this does not affect Jamaica, and is only an illustration, for it is not possible to ship potatoes from here to New York owing to a ban by the U.S. Government.

"Although I have given you a rough outline of the growing of the crop, I have not spoken of the most important part: that is, the cost of production. And it is the cost of production of any crop that decides whether it can be grown commercially or not, in view of this excessive competition about which I have been speaking. And with potatoes, as with many other things, it usually follows that the larger the area planted the lower the cost. Seed and fertiliser can be purchased cheaper in large lots, also labour-saving machinery can be utilised, which would be too heavy a capital outlay on small plantings. After reaping the crop from a large area it can be transported to the coast by truckload or railway car lots which reduces handling and transport charges to a minimum. Supervision is also lighter when large quantities have to be packed and crated. Against this is the difficulty experienced in obtaining large enough stretches in these districts on which it is profitable to use machinery and which sometimes means taking in land which is not quite first class on purpose to get these workable areas.

"Now there is no doubt a number of opinions as to the cost of production of an acre of potatoes in St. Ann. And there is no doubt that the figure varies greatly in different districts. I expect for the smaller cultivators who rely on hard labour the cost would be in the neighbourhood of £25 an acre or more. For larger people who can do their ploughing with horses or mules, I should suppose that £20 an acre would cover their costs. On a large scale and using tractor drawn implements this can be cut by another £3 or £4.

Now probably some of you are thinking that if potatoes can be grown for £16 an acre, and 50 to 70 barrels can be reaped to the acre, there must be a gold mine in the business. But I would ask you to consider three points. First, potato crops fail sometimes, especially during too dry or too wet weather, and in this case the cost of production is turned into a loss of £16 an acre. Second, when you have grown your potatoes you still have to sell them and, if you are growing for export, by no means all of that 50 to 70 barrels can be shipped. And, third, to get yields such as these, needs money spent on green manuring if you are continuing potato growing on the same land for two consecutive years. For speaking of yields generally, I have heard of so many people who have grown fourteen to one, up to twenty to one since arriving in Jamaica, that it seems that here, as in other countries, potato growers are very much like fishermen. Of course, I wouldn't doubt that large yields have been obtained, but growing a few rods or even acres on some extra good land is a different proposition to running a commercial potato-farm. Perhaps I am modest about this yield business for I have grown one thirteen to one crop since coming to Jamaica. Last year at Kendal in Manchester I had a five acre field of Green Mountains that looked particularly good, and I was looking over it one morning with a man who grew some potatoes up at Devon which is, I believe, the home of Jamaica potatoes. He thought the field looked fine and he was pretty sure I should get ten or twelve to one. Privately, I thought if it did five to six to one I should be lucky. Later when we were digging the field the same gentleman happened to be round again. He asked me what the yield was like and I mentioned about six to one, which it was doing. This seemed to puzzle him a bit and he asked how I cut my seed and I told him that as it was big I had cut each potato in about three pieces. Then he took me to a part of the field that was not dug and

proceeded to pull up three roots. "Now," he said, "There's four potatoes on this root, five on this one, and four on this one. So that makes it 13 to 1, by the way I count."

"But to return to the question of cost of production, I was talking of a crop of 50 barrels, or 150 bushels to the acre, and from this crop probably 120 bushels would be good enough to ship to foreign markets. And from there I am afraid I would not like to give you any further estimates. For if the crop was going to Canada that expenses of packing, crate, inland and ocean freight and selling charges would absorb from four to five shillings, and the price at which the crate would be sold would be anything between five and ten shillings. In the case of England the costs of shipping and selling would be higher, and the fluctuation in price quite as much, particularly late in the season.

"The whole question of shipping to foreign markets needs very careful consideration, for the produce required in Montreal and London differ so much that it is necessary to cater for each one separately. Montreal requires fairly big potatoes, and London wants small ones. Then again, Montreal wants stuff fairly firm of the skin although fresh, whereas in London potatoes are nearly unsaleable if they are at all tight-skinned or mature. Again, Canada likes round "new potatoes" such as Cobblers and Green Mountains, while in England they won't look at a "new potato" unless it is kidney-shaped.

"Great Britain, of course, is by far a bigger market than Canada. In 1935 the total imports of new potatoes into England was almost 6,000,000 bushels of which nearly half came from Spain, and paid a fairly heavy duty. This year, although Spain is temporarily out of the business by reason of the war, large quantities are being shipped to England from Morocco, Cyprus, Malta, Algeria and the Canary Isles.

"Although it is so big, the English market is very discriminative and requires very good, fresh, young potatoes. The variety they like best are known as Royal Kidney, which, as the name implies, is a kidney-shaped potato. We have tried out this variety very extensively this season and find that it does not yield very well, and further it does not grow true to the parent stock but has a tendency to grow round in shape. This spoils it for the highest priced market in England, and I am rather afraid that we shall have to find a substitute in Jamaica for this variety if we are to take full advantage of the British market. Further, to reap Royal Kidney at the stage at which it is required in London, cuts the yield very considerably.

"On the other hand, the Canadian market, although small compared with England, is not so particular, either as to shape or condition provided the potatoes are freshly dug. Shipments made to Montreal both this year and last year, have found a ready market at prices just as good as Floridas and Bermudas. In fact, the retail stores have asked for Jamaica's, as they report that their keeping qualities are excellent and they do not lose their freshness quickly as some new potatoes do. Having had considerable experience of the marketing of potatoes from various sources, I also can definitely say that Jamaica produce is really good and no one can complain either of their appearance or eating qualities.

"Now, at present, the only export markets available for us to ship to are England and Canada. And on both of these, as I have explained, the price factor is purely controlled by supply. Good years can be struck and bad ones too, but at present I could not recommend anyone to plant heavily for the English market; while Canada is safer, prices

there fluctuate a lot, and it needs a low cost of production and good yields to really make money.

"The season for shipping to Canada is from March to May and sometimes June; while, in England there is a good market for small quantities of small immature stuff during January and February, and from March to the end of May demand is heavy for somewhat larger stuff, which also has to be green, and immature. Prices for the latter rarely exceed eleven or twelve shillings a bushel and often are not more than nine or ten.

"There remains then only the local market, which takes considerable quantities of potatoes, usually at very good prices. At present the consumption is rather limited but seems to be increasing and could, I believe, be worked up considerably. The chief drawback seems to be stabilizing a price, for at times Kingston is bare of potatoes and at other times growers descend on the town and accept any silly price for their produce. Another factor which is surprising is that in Kingston local potatoes are considered very inferior to the imported article. This is difficult to understand for as I remarked before, I consider really good Jamaica potatoes as second to none. Then again in Kingston they always ask for larger potatoes and do not want to buy the smaller ones, even at a low price. This is also hard to understand, for small potatoes are usually better flavoured than large, although more trouble to prepare for cooking.

"Now I must conclude my short talk, and I still feel that I have not fully answered your Secretary's question. So now I will answer by saying that unless you have plenty of capital and a certain amount of experience it is not advisable to plant potatoes on a large scale.

"In a year or two I may be able to give you other advice. For, although we need to do a lot more work before we can call the London market profitable, it is certain that we can grow produce in Jamaica of equally as good quality, or better, than other new potato producing countries. And if you were setting up a factory for the production of a new brand of razor blades or shoes, or ready-made clothes, you would not expect the public to rush after your products unless you sold them at very low prices; even then a lot of people would prefer, and quite rightly, to keep on buying where they had found satisfaction before. So it is to-day with produce and foodstuffs, although in appearance one potato is very much like another. Also the ramifications of the wholesale produce business are many, and lots of individuals and groups of growers in other countries are financed by the wholesale dealers, and, regrettedly, not only financed but often indebted to them.

"All of this makes it hard to break into markets, and whereas years ago growers were able to make quick fortunes with primary products, the excessive competition found to-day makes it now impossible.

"Perhaps you will think that I am rather pessimistic. This is not so, for during the last few years I have noticed a number of substantial businesses in various fruits and vegetables built up from small beginnings. But I read so often letters from various people in the Colony who are quite sure that if only this were grown, or that, we should all become wealthy overnight. That most of these letter-writers live comfortably in a town, and would not know one end of a plough from the other, is beside the point, and when I hear of these hypothetical goldmines I think of the words written years ago by a very wise old Greek philosopher, which unfortunately seem even more true to-day than ever. He said: 'A happy man indeed is the farmer, for he is free from all the anxieties of gain.'"

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We reproduce below an account by Instructor Hastings of an Experiment in potato growing which is very interesting indeed if in no other direction, as regards the yield.

Due attention was paid to tillage and application of fertilizers, and the method of spraying may be termed a new one for Jamaica. We ourselves have tried this "Spray" in heavy rainy weather and the portion of the plot treated with this mixture stood up all through the season till they died down naturally.

There is no certainty of procuring good unslaked lime always, and in places it is not obtainable at all, so that the use of the slaked material has to be resorted to.

EDITOR.

AN EXPERIMENT IN POTATO GROWING.

Now that potato-growing is being tried out all over the Island, it may be of interest to readers of the "Journal" if you publish the following report on an experiment conducted by me:—

On the advice of Instructor J. A. Graham, I planted on January 19th of the present year, 21 lbs. of seeds. On April 12th I reaped 378 lbs. of large, uniform, smooth, delicious potatoes. This represents a yield of 18 to 1, which is quite as good as, if not better than in any other place I have heard of in Jamaica.

The particulars in connection with the experiment are as follows:—

(1) Locality—On my own land at Great Valley, in Hanover.

(2) Site.—On the west side adjacent to a lofty old-time sugar factory which completely excludes the rays of the afternoon sun—a feature which may or may not have been to the advantage of the experiment.

(3) Elevation.—800 feet above sea-level.

(4) Soil.—White limestone formation, deep, clayey loam, rich soil.

(5) Forking.—Two forkings at two months apart. At the last forking, which was immediately before planting, the soil was thoroughly pulverized and refined.

(6) DRILLS.—1 ft. deep, 2 feet 6 inches apart made down the slope which, however, was very little of a slope, the land being almost level.

(7) *Seeds.*—Cobbler variety, well sprouted, obtained from the Agricultural Society and cut into moderately small sets.

(8) *Fertilizer.*—7.10.12, obtained from the Agricultural Society, 21 lbs. corresponding with the weight of seeds to be planted. Fertilizer sown evenly on bottom and sides of drills.

(9) *Planting.*—Distance apart in drills, 15 inches. Fertilizer scratched away from the little spot at the bottom of the drill on which spot each seed-piece is to be laid. A fork full of earth from the adjacent ridge thrown on to cover each seed-piece.

Note.—Fertilizer must not be allowed to touch seeds as this will ruin them.

(10) *Cultivation.*—The ridges were lightly forked into the furrows of growing potatoes, a little at a time according to the stand of the plants, and continued until what at the beginning were drills had become low, flat mounds and the mounds had changed into shallow drills.

(11) *Spraying.*—The first spraying was given just as soon as the first plants appeared above ground. The second and third sprayings were at intervals of seven days after each preceding one. Subsequent sprayings were at intervals of ten days and continued without a break until the plants were fully matured and dried. Not a single plant showed any signs of the Blight—this by reason of regular, faithful spraying.

It was not sufficient to spray just the top and sides of the plants; the underneath portions were sprayed just as well. This is very important and should never be neglected.

(12) *Sprayer and Spray.*—The sprayer used was the "Iron-Arm," than which there is no better for work on a small scale. The spray was an unorthodox type of Bordeaux Mixture, used as a further experiment (recipe supplied by Instructor Graham) the formula for which is: Blue Stone, 1 lb., slaked lime, 1 to 2 kerosene tins; water enough to make a cement barrel full of the mixture. This concoction is a thick, rich fluid which applied sticks to the plants and, given an hour or so of sunshine, defies the rain after that to wash it off. This undoubtedly seems to be the remedy for preserving potato from the Blight A lime and blue-stone spray, with enough adhesiveness to stick for long periods and in all kinds of weather. Slake lime—as much of it as the mixture will hold for the purpose—furnishes that quality of adhesiveness.

Let me hope that these notes will induce many "Journal" readers, who have not already done so, to try potato-growing on a small scale next planting season, with even better results than I have had

C. C. HASTINGS,
Agricultural Instructor,
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A FEW HINTS ON THE SOWING AND GERMINATION OF SEEDS.

> "A thorough knowledge of the conditions necessary for the germination of the different kinds of seeds is essential for a successful beginning. The very general want of knowledge in this matter is too often the cause of much undeserved censure upon the Seedsman, for, in nine cases out of ten, the failure is not with the seeds, but results from the time or manner of sowing."
>
> —*Pocha's Garden Guide.*

This quotation which is taken from an authoritative source and refers to conditions obtaining in the Tropics, sums up clearly our own experience in the handling of large quantities of seeds over a number of years. It is a common belief in this country that the sowing of seeds is the simplest part of the gardener's work, and this is probably influenced from the fact that in many instances seeds germinate rapidly and vigorously without any particular attention after having been sown in a most haphazard manner. This encourages a tendency to treat all seeds alike and a slackening up of all the precautions and care that are necessary for success is frequently observed. We suffer from an unnecessary handicap in our work in this direction, by the apparent reluctance of most persons to report at once any failure of seeds to germinate and many prefer to nurse up a grievance and remain silent instead of seeking out the cause and adopting corrective measures.

As each packet of seed leaves us we try to visualize an empty plot on some holding or kitchen garden being transformed in due course into a green thriving patch of health-giving vegetables, and it is as much a disappointment to us if these hopes fail to materialize.

Although a good deal of attention and constant care is given to ensure that only seeds of high germinating quality are sent out we are at times subject to an unusual number of complaints which is a sure indication that something has gone wrong somewhere.

To begin with, it is important to make sure that seeds have not lost their ability to germinate and this is taken care of in our Seed Testing Cabinet—a very useful apparatus—suggested and designed by Mr. F. E. V. Smith, our Plant Pathologist. In most cases we are able to record at least 80% germination, even from seeds which some disgusted customer has returned stating that the other portion was no good. At the same time there are customers of very long standing who have authorized us to state that over a long period of years they have never had a single failure from our seeds.

It is important to remember that any seeds will give best response when they are sown under conditions as nearly like their native habitat as it is possible to provide for them.

Tests have shown that certain flower seeds sown out of season give only 15% germination, but when tested at the time when they would naturally start growing, they germinated 100% quite readily.

No seed grower has yet mastered the art of producing a perfect strain of seeds, and so all seeds sold to us—no matter how expensive—are sold under conditions which hold good all over the world.

Those who have overseas seed catalogues in their possession may confirm the statement which usually appears in the following form: "In accordance with the universal custom, we give no undertaking that the seeds, bulbs or roots will correspond with the description under which they are sold, and we make all sales subject to this condition.

We further give no warranty expressed or implied as to their growth, quality or productiveness, and will not be in any way responsible for the Crop."

As we buy our seeds on quality and not on price, our customers may expect to get better results than when seeds are selected on account of their lower price. They may also rest assured that all during the year, we are endeavouring to obtain *better* what we think to-day is *best*.

An important feature which is often overlooked, is that most vegetables which our not too severe climate allows us to attempt with some measure of success, are not natives of the West Indies, and in consequence, require a greater amount of care and attention than such acclimatized vegetables as Pumpkins, Chochoes, Callaloo, etc.

What is the right time to sow seeds? We have prepared a time table for guidance throughout the Island to which please refer, but it must be borne in mind that local climatic changes may tend to cause a certain amount of variation in these dates. Many failures may result from sowing too early. Sowing must be done at the proper season. Even in the case of weeds, the seeds will lie dormant in the soil for months until the right time comes round when they will all begin to germinate and make rapid growth.

What are the chief causes of failure? We can name at least six possible causes very prevalent in Jamaica:

1. Ravages of insects: Ants appear to be responsible for a large percentage of failures as they can be very voracious when they discover any seeds to their liking. Ample protection should be provided. (See April, 1937 Journal, p. 217.)

2. Sowing delicate seeds too deeply. A safe rule lays it down that small seeds may be covered to a depth equal to their width.

3. Excessive watering: Many people hold the mistaken idea that soil in which seeds are sown should always be kept well soaked. Such conditions cause some seeds to rot and encourage the "Damping Off" Fungus, which is very destructive to young seedlings.

4. Extremes of light or shade. Seed boxes may be covered with old newspaper until the seedlings begin to peep out, after which they should be exposed gradually to strong sunlight.

5. Sowing at an unsuitable time or in improperly prepared ground.

6. Soil conditions are sometimes unfavourable to germination, causing only a small percentage of seedlings to come up.

General Hints.

Shallow boxes are preferable, say about 4 ins. deep, which should have several holes bored in the bottom to drain off surplus water. Soil should be composed of about 2 parts top soil, 1 part sand, and 2 parts leaf mould. Always press down soil on seeds after sowing, either with the hands or a flat piece of board.

Fleshy roots, such as Carrots, Beets, Turnips, etc., are best sown directly where they are to be grown to avoid transplanting. In sowing fine seeds a good plan is to mix them first with a handful of fine sand, as this helps to distribute the seeds evenly in the seed boxes or drill.

We have just concluded a series of valuable articles by the Government Entomologist on the Control of Insect Pests by means of Insecticides. Copies of these Journals should be carefully preserved for future reference as they will certainly be needed.

TABLE FOR GARDEN VEGETABLES. TIME FOR SOWING SEEDS, &C.

Kind of Vegetables.	Time for Sowing Highland.	Time for Sowing Lowlands.	Time for Sowing Midlands.	Days to Germinate.	Days to be ready for use.	Distance. rows.	Distance. apart.
Beans, French (Red Peas)	Every 2 weeks	Nov. to Feb.	Aug. to March	3 to 8	35 to 40	4 inches	18 inches
Beans Dwarf Lima	Feb. to April	do. do	do. do.	6 to 8	65 to 90	4 inches	2 ft.
Beans, Pole Lima	Feb. to April	Aug. to March	do. do.	6 to 8	65 to 100	2 ft. 6 in.	4 ft.
Beans, Old Homestead	Feb. to April	Aug. to March	Aug. to March	6 to 8	40 to 60	2 feet	4 ft.
Beets	Every 4 weeks	Oct. to March	Oct. to March	7 to 9	60 to 90	4 inches	15 inches
Brussels Sprouts	Every month	Sept. to Jan.	Aug. to March	4 to 10	100 to 150	2 feet	2 feet
Cabbage	Every month	Sept to Jan.	Aug. to March	4 to 10	100 to 150	3 feet	3 feet
Carrot, Half Long	Every month	Oct. to Feb.	Oct. to March	10 to 15	65 to 90	4 inches	1½ feet
Carrot, Long Orange	Every month	do. do.	do. do.	10 to 15	90 to 120	5 inches	2 feet
Cauliflower	Every month	Sept to Jan	Aug. to March	4 to 10	100 to 150	2 feet	2 feet
Celery	Feb. and March	Oct. to Feb	Oct. to March	12 to 20	135 to 160	6 inches	3 feet 6 ins.
Corn	Jan. to Mar. / Aug. to Sept.	Aug. to Sept	Mar. to April / Aug. to Sept.	3 to 8	50 to 100	3 feet	4 feet. / 2½ feet
Cucumber	Every month	Oct. to Feb	Oct. to March	6 to 8	60 to 80	4 feet	4 feet
Egg Plant	Feb. and March	do. do	do do.	10 to 14	130 to 160	2½ feet	2 feet
Kohl Rabi	Every month	do do	do. do	6 to 8	65 to 85	9 inches	½ foot
Leek	Jan. to Feb.	do. do	do. do	6 to 10	120 to 160	6 inches	2 feet
Lettuce	Every month	Every month	Every month	3 to 10	75 to 100	8 to 12 inches	10 to 15 ins.
Melon	March	Aug. to March	Aug. to March	8 to 12	110 to 130	8 feet	8 feet
Mustard	Any time	Aug. to Feb	Any time	3 to 8	30 and on	9 to 12 ins.	1 foot
Okra	Any time	Any time	Any time	6 to 12	40 and on	4 feet	4 feet
*Onion	Sept. to March	Sept. to March	Aug to March	6 to 10	120 to 180	3 inches	1 foot
Parsley	Feb. and March	Oct. to Jan.	Oct. to Jan	6 to 24	90 to 120	4 inches	1 foot
Peas (English)	Nov. to March	do. do	Nov. to Jan.	5 to 10	60 to 90	3 inches	3 feet
Pepper	Any time	Any time	Any time	4 to 10	130 to 150	2 feet	2½ feet
Potatoes	Feb. to March / Aug. to Sept.	Oct. to Jan.	Nov to March		75 to 100	10 inches	2½ feet
Pumpkins	March	Aug. to March	Aug. to March	6 to 10	100 to 125	8 feet	8 feet
Radish	Every month	Any time	Every month	3 to 6	25 to 50	2 inches	1½ feet
Spinach (Callallo)	March	do. do.	do. do.	6 to 12	60 to 75	4 inches	1½ feet
Squash	March	Aug. to Feb.	Aug. to March	6 to 10	60 to 75	4 feet	4 feet
Tomato	Jan. to April	Sept. to Feb.	Oct. to March	4 to 10	125 to 150	2 feet	3½ feet
Turnip	Every month	Oct. to Feb	do. do.	3 to 7	60 to 75	6 inches	1½ feet

*Best seed available September to October.

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Address by Supervisor A. P. Hanson to the Trelawny Branches Associated, 26th June, 1937.

THE CULTIVATION OF LIME TREES.

It is believed that one of the most promising of our Minor Industries is the cultivation of Limes. I have chosen this as a topic on which to address you, because on the occasion of recent visits into the parish, several questions have been put to me on the subject.

Uses, Etc.

From Jamaica, we export the lime fruits in fresh condition, and to a limited extent, the raw lime-juice. Many of us are left still wondering to what use large quantities of limes are put. Well, raw lime-juice is used in making certain medicines, and drinks known as cordials. Concentrated lime-juice is obtained by heating the raw juice, reducing it to 1/12th, 1/10th, or 1/9th its original bulk. This concentrated juice is used in making commercial citric acid. Then there is the essential oil of the rind of the fruit, which oil is of value in perfumery and confection. It should be noted that there are sweet and sour kinds of limes. The sour lime is that with which we are dealing.

The lime is believed to have come originally from India. Into Jamaica, it is supposed to have found its way from the French Island of Martinique. In certain parts of the Island, the fruit is still referred to as the French Lime.

The Island of Montserrat was first to become the headquarters of the lime industry in the West Indies, but in later years Dominica occupied first place. It was from these countries, through the services rendered by the Imperial Department of Agriculture, the late Sir Daniel Morris, being Commissioner for the West Indies, that we obtained our first lessons in Lime Tree Cultivation.

Varieties.

The variety of lime generally cultivated is the "spiny" or thorny variety. There are also "spineless" and "seedless" varieties. *The Spineless* lime grows erect, while young, but as the trees grow older and bear fruit, the branches bend downwards. The tree is without thorns. The fruits contain only few seeds while the skin is smooth and thin. They are smaller than the fruits of the ordinary lime, but are very juicy. *The "Seedless"* varieties were noticed in certain W.I. Islands and propagated by budding.

Choice of Land.

Lime trees develop best and yield the heaviest crops in rich, well-sheltered situations from the coast-lands up to about 2,000 ft. above sea-level with a rainfall of 80 inches, and upwards per year, given suitable soil and care. Limes are surface feeders, and will flourish in comparatively shallow soils overlying heavy clay. In Dominica some of the best groves were located in coastal lands formerly cultivated in sugar cane. Limes in Jamaica can be successfully cultivated on the hills also, provided there is sufficient rainfall, and not too prolonged a dry spell. They may be grown on our red limestone soils, but are at their best in the rich coastal, and valley lands with their light, black soils. Reduced rainfall, low humidity, and exposure to wind shorten the life of a grove.

Laying Out of Groves.

Limes prefer to grow naturally in bush or thicket growth without large shade trees. They profit greatly by the company of surrounding vegetation such as cassava, but object to dense overhead shade. The surrounding vegetation affords protection from scale insects, and tides them over the critical period, till they are "established." From this fact, has arisen the practice, especially where the rainfall is low, of starting lime trees in land formerly cultivated, or among such plants as sugar cane.

The greater part of lime cultivation in Dominica was established on old sugar cane lands. As a solution to the sugar problem so much discussed among us now, it may be a case of history repeating itself. When the canes were cut, the holes were dug, and the seedling limes planted. Gradually, the canes around the plants are removed a wider and wider distance till the grove is established.

Limes may also be grown among gungo (pigeon peas), cassava, cocoes, yams, etc. If in grass land, the holes are dug and planted in the proper way, circle forking being applied, and the ruinate billed (cutlassed) this bush being applied to the forked circles around the young trees as mulching.

When forest land is taken up, the usual felling and lopping of trees are followed by lining and hole-making After planting, the space around each plant is kept clean and tilled. The bush and grass that spring up over the field are kept down by cutlassing.

Where, because of wetness in the soil, or in order to prevent washing, trenches are necessary, these should be completed before planting. Much damage is usually done to the young plants by later trenching.

Protection from wind is a necessity also. Exposure to the wind has a dwarfing effect on the trees. Lime flowers are very easily blown off the trees. Trees exposed to the full force of the wind suffer later on from the disease known as "die back." If, therefore, the grove is not protected by higher lands around, or by existing trees, then hedges for wind-breaks must be early established.

Raising Plants.

Now that so much budding of sweet orange and grapefruit on sour stock is being conducted in Jamaica, it will be readily understood by all that lime trees may be established in just the same way by budding on sour stock. It is to be expected, however, that many groves may still be established from seeds and seedlings.

Lime plants are usually raised in nurseries. First, a seed bed is made in a sheltered situation. The soil is thoroughly tilled. Beds from 4 to 5 feet wide with pathways 2 to 3 feet, running between are made. The dark soil from the paths is thrown upon the seed-beds raising them, and assisting drainage, at the same time increasing the depth of the surface soil.

Prepare the nursery beds similarly. Have the soil thoroughly broken up in each instance to enable the seedlings to develop a good root system. Plants with a poor root system die, when transplanted, or give much trouble to grow them.

Sometimes, seeds are planted at stake in the field. Several seeds are sown at each stake, and only the most vigorous of the resulting seedlings are allowed to remain, one at each stake.

Before sowing, place the seeds selected in a fine sieve. Keep stirring

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with the hand while water is poured over to wash the gummy substance (mucilage) off. Dry the seeds in the shade. As soon as they are dry enough for handling, sow them, because lime seeds lose their vitality rapidly.

When the lime seeds are sown unwashed rats very often dig them out, and eat them, but they seldom interfere with seeds well washed and dried, as indicated.

In the seed beds the seeds may be sown in drills 8 to 9 inches apart, running across the beds. Sow the seeds thinly, and cover, not more than an inch deep. A seed bed 5 feet wide and 100 feet long with drills 8 or 9 inches apart, should give from 5,000 to 6,000 strong seedlings.

Transfer the seedlings from the seed-bed into the nursery bed, when they are 4 to 6 inches high. Carefully lift them with a fork, trim the rootlets, and cut off the young tops. Keep the roots covered with damp material such as baling, not green grass, while they are out of the ground.

Generally two men are required to do large-scale planting. They need two garden trowels, a line to keep the rows straight, two pieces of stick 8 to 9 inches long to measure the distances, and a piece of board —the two men working together set one foot each in the path on his side, and the other foot on the piece of board. Each row in a bed 5 feet wide will contain 7 plants. A nursery bed 5 feet wide, and 100 feet long should give 1,000 selected plants.

Planting Distances, Etc.

Planting out in the field should always be done in time to ensure satisfactory growth before the dry season commences. The land before planting, should be carefully lined.

In lands previously under cultivation, fork a small bed, and have the earth slightly raised into a mound in which to set out the plants. In newly cleared forest land, make the holes about 18 inches deep, and from 12 to 15 inches square. After a few weeks, make them into mounds and plant out.

In heavy soils there is the tendency for the holes to form "water-traps" during the rainy season, with the result that the young plants either die through decay of their roots, or are severely checked in their growth. In such soils, do not dig down. Fork and make the mound.

When the lime plants are from 16 to 18 inches high they are ready for planting out They should be carefully lifted again with fork from the nursery bed. The ends of the branches should be cut back 3 or 4 inches, either before lifting, or immediately after. The roots should be kept moist, or covered with mud till planted. Dry wind or heat dries out the roots and prevent growth. The young trees should be planted the same depth as they grew in the nursery, i.e., with the roots covered, and not the stems. Careful preparation of land, care in planting, and good after cultivation are repaid by healthy, quick growth, and large early crops. Limes are planted at varying distances apart, according to conditions. The following are acceptable:—

On steep slopes, and not particularly good soil—
plant 12 feet x 12 feet = 308 plants to the acre.

On fairly good flat land—
15 feet x 15 feet = 193 plants to the acre.

On good soil with a good rainfall—
18 feet x 18 feet = 134 plants per acre.
or 20 feet x 20 feet = 109 plants.

On moist land with an abundance of vegetable matter, 25 feet by 25 feet may not be too great a distance, the acre accommodating 70 plants.

Lime trees are dome shaped. When planted wide, they give better results, as they present a greater bearing surface than those plants that are struggling for light.

To control diseases and pests, much spraying will have to be practised. At best, this is a difficult job with lime trees, and an utterly impossible one where trees are closely and irregularly planted.

After Cultivation.

Lime trees from seedlings may under favourable cultivation, commence to give a few fruits in the third year after planting. Seedlings attain full bearing at 8 to 10 years. Under favourable conditions, they continue for 30 years and more.

The growth, development, and duration are much assisted by green crop manure, such as Overlook Beans. This crop is grown to keep down weeds, and supply humus to the soil. It is cut down at intervals, two or three times a year, and used as mulch. In any case, to keep the land in good condition, and prevent the lime trees declining, there must be kept up the application of pen manure, and the use of frequent mulches of bush and grass, as well as of such fertilizers as may be scientifically approved, or recommended.

Lime trees require but little pruning, except that all water suckers and dead branches should be resolutely removed. The water suckers are such as grow out of the main stem, and others that tend to choke the bearing branches, and cause them to die off. Should a tree at any time lose one of its main branches, then the surface should be cut smooth and tarred, and a fresh growth trained to take the place of the lost branch. When the main branches are formed, the weak under-branches should be pruned off.

The length of time from the flowering to the maturity of the lime fruit may vary, but it is generally put at five months.

The yield per acre of fully established groves varies also. Cultivations yield from 80 to 100 barrels of fruits per acre, while some have been known to yield 150 barrels.

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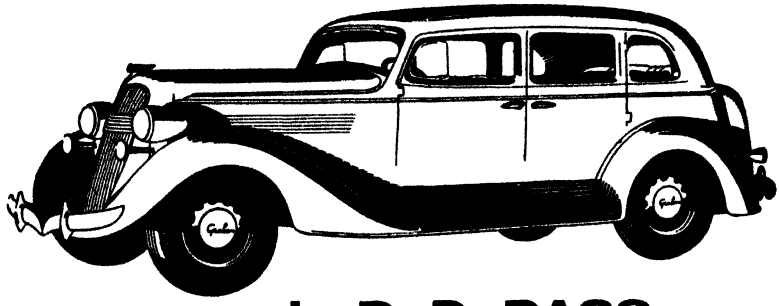
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These Stock Notes by Instructor Atkinson should be read with interest by all owners of Stock. Instructors help a good deal with stock of all kinds in their districts, and those in St. Ann are fortunate to be supplied with a kit of remedies, bandages, etc., supplied by the St. Ann Branch of the S.P.C.A., of which they make the best use.

EDITOR.

STOCK NOTES.

PROLAPSE OR EVERSION OF THE UTERUS.

This condition is also known as "Falling out of the Calf Bed" or "Coming out of the Womb."

Causes.—This condition nearly always occurs in connection with Parturition, caused from want of care in the removal of the after-birth, which necessitates severe after pains and violent straining. It may also be caused from breeding an animal that is too old or too weakly constituted. While it occurs chiefly in cows, ewes, and sows, it seldom affects mares.

Symptoms.—The womb hands down from the vagina as a large reddish bag. This occurs generally after parturition; but it may also occur at times three or four days before parturition.

Treatment.—First prepare a kind of a "chute" on an incline in which the animal is to be put. It is very necessary to have the incline so that when the animal stands its hind-quarters are to be much higher than the forequarters. The "chute" should be so made as to prevent the animal from turning in it. Arrangement must be made for a feeding trough in front of the "chute" or narrow stall.

While this is being done give the patient a couple of doses of Gaseodyne or some other stimulant for the nerves of the animal. Next place the animal in the "chute" and with the help of attendants hold a clean sheet rung out of warm water containing a disinfectant under the vagina with the projected womb resting on it. Have the womb thoroughly cleaned off, and remove whatever placenta there is adherent in it, so as to avoid future straining to pass this away. This done the operator should have both hands anointed with Chemical Extract or some other antiseptic to the shoulders. The Chemical Extract may also be applied to the Uterus. With gentle pressure the uterus is now forced back into its original position. In the absence of a prolapsus clamp, place a couple of stitches, three or four, with the aid of a strong needle and "tape" across the Vulva to assist in keeping the Uterus in. As soon as this is done give another dose of Gaseodyne in gruel or Linseed Oil (Raw). An occasional dose of Red Drench may also be given, especially if the animal has fever. Keep the animal in this position for at least two days, by which time if everything is O.K., the stitches may be removed. Feed the animal on a light diet and see that it is sheltered from rain and sun—do not take the young away from the dam as the sucking influences the Uterus to contract.

It is advisable to fatten any such animal after it recovers and do not breed again as very often it will re-occur.

N.B.—The position of the animal on the incline is to encourage the Uterus to remain in its position when it is replaced.

PYOSEPTICEMIA OF SUCKLINGS.

This is commonly known as Joint Evil, Joint Ill, and Navel Ill. It is an acute contagious infectious disease of animals less than a month old.

Cause.—It is caused by an infection picked up through the navel, due in most cases to neglect of owners in attending these animals and having the navels properly disinfected. It may also be caused by allowing infected animals to run with uninfected animals.

Prevention.—The dam about to be delivered should be put in a clean well-ventilated pen and the bedding sprinkled with some non-poisonous antiseptic. As soon as the young animal is born the navel should be "milked" with disinfected hands so as to remove the gelatinous substance around the cord and it should be disinfected with tincture of iodine, and covered with a good antiseptic powder such as dried alum, camphor and starch in equal parts, so as to aid the desiccation of the cord.

Symptoms.—This disease is generally divided into three forms, namely:—

(a) Septicemic; (b) Articular; (c) Umbilical.

(a) *Septicemic.*—In this form, a day or two after birth the animal refuses to suck, looks depressed and can hardly stand; usually the temperature is high and the animal generally dies in a day or two. This is the worse kind and very little can be done to help.

(b) *Articular.*—This kind is frequently met with especially in goats. The swelling of a joint or joints a few days after birth is the chief symptom. Very often owners mistake this swelling for a blow or a squeeze from the dam. The swelling generally occurs in a limb joint (tarsal, carpal and femorotibial) and is inflammatory in character. If this condition is not quickly remedied it may cause permanent swelling of a joint or joints. Since animals cured never make very good animals and develop slowly, every care should be taken to prevent rather than cure.

(c) *Umbilical.*—In this form local inflammation appears, the navel becoming painful, hot and swollen. This is very often accompanied by abscess of the navel.

Treatment.—While very little can be done to help (a) the following treatment may be used effectively for (b) and (c):—

By the use of hot applications encourage the swollen parts to come to a "head" and soften. By the use of a sharp disinfected knife, cut into the abscesses and squeeze out the bad stuff. Next, by the use of a syringe, wash out the cavity and pack it with a bit of gauze dipped in Chemical Extract or any other suitable disinfectant. Keep the wound open for a couple of days to allow drainage, after which encourage it to heal by applying a salve or a good wound powder (Sulphur and Charcoal).

While the joints are being treated, the navel should not be neglected, as this is generally the cause of the infection. I find a hot, roasted sour orange and ashes help considerably in softening the swollen parts and thus prepare them for the surgical operation. Take care to bathe the affected parts with disinfectant—clear away the hairs by using a pair of scissors or razor, and disinfect your knife.

I have treated quite a few cases as mentioned above in kids and have been very successful.

N.B.—I have tried in this article to avoid big terms; but even then it was not possible to get rid of all. Treatment mentioned in both cases are not above the means of the small man as the remedies required are not very expensive and are obtainable.

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MILK FOR PIG-FEEDING.

Now that the seasonal flush of milk production is upon us, the use of milk in pig-feeding deserves comment.

No product has a higher value for the purpose than milk, but those who give it to pigs do not always feed it to the best advantage.

The milk should naturally be given as part of a balanced ration. Whole milk, if fed in moderate quantities along with suitable amounts of Barley meal and Weatings, can be depended on to produce just about 1 lb. live weight increase for each gallon used.

This does not mean that a certain amount of meal is needed in combination with the gallon of milk to get 1lb. gain. The two foods together will enable a pig or pigs to put on well above that amount of weight. But for every gallon consumed as part of a balanced ration, there will, on average, be just about 1lb. increase, derived from the milk alone.

Separated Milk Best.

Separated milk is, however, a much more economical feeding-stuff for pigs than whole milk. The fat of the milk, sold as butter, will fetch 1s. to 1s. 6d. per lb., while it is certainly not worth more than about 3½d. as pig food.

The chief value of milk as a pig food lies in the 5½ oz. of protein (casein and albumen) and the 1 oz of easily assimilated matter which each gallon contains. These are left intact in the separated milk.

A mixture by weight, of 2 parts Weatings with 3 parts Barley meal and flaked Maize, stirred up with separated milk at the rate of 3¼ lb to the gallon, forms a correctly balanced ration.

Also, each gallon of milk with the 3¼ lb. of meal represents enough for the day's feed of two young pigs. This same quantity should, too, produce nearly 1½ lb live weight gain, i.e., ¾ lb each on the two pigs.

On butter-making holdings it used to be a common practice to feed separated milk to young pigs in rather slap-dash fashion. For instance, a big pailful would often be tipped into the trough—as a meal by itself. But good results cannot be obtained in that way.

We would repeat that separated milk should never be given (except in very small quantity) without being balanced by starchy meals added to it. Given alone, the pigs do not get full advantage from it, and the excess of protein is apt to be injurious.

—*Smallholder*, June 12, 1937.



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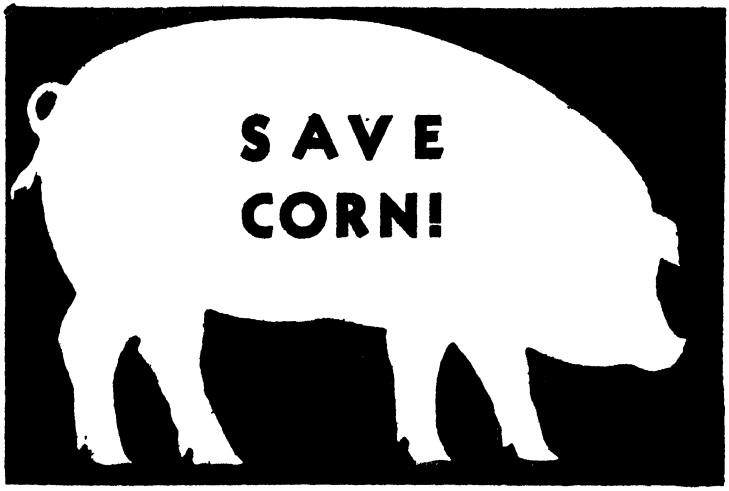
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POULTRY NOTES.

Some General Hints on Poultry Rearing.

By Dr. Vincent Tavares, D.V.S.

Poultry, allied to the French word "Poulet," a chicken, is a term which includes all domestic fowl propagated and fed for the table and for their eggs. Poultry may be divided into white-fleshed fowl, as chickens, guinea-fowls and turkeys; and dark-fleshed fowls as ducks and geese. The white-fleshed fowl are tender, delicate-flavoured, and contain exceedingly little fat (3 or 4 per cent.) The dark-fleshed are harder, strong-flavoured and rich in fat (often upwards of 40 per cent.) It is a common practice to deprive fowls of the sexual organs at an early age that they may grow larger and improve in flavour and tenderness. Thus treated a cock bird becomes a capon, and a hen a poularde. Young cocks and hens are about equally tender, but unless treated as above the cock bird soon toughens, and after a year old, is only fit for soup.

The term chicken should properly be restricted to the young female bird under four months old, after which it becomes a pullet, till it begins to lay, when it is called a hen. Small-boned and short-legged poultry are, as a rule, preferred and more likely than others to prove delicate and fine-flavoured.

As regards feeding, naturally-fed birds are better than crammed birds, and ducks fed on grain and vegetables are more delicate than those allowed to feed on animal offal. Good poultry should be firm to the touch, pink or yellowish in colour, fairly plump and should have a strong skin. It has a fresh, not disagreeable smell. Stale poultry loses its firmness, becomes bluish in colour, green over the crop and abdomen, the skin readily breaks, and the bird has a disagreeable odour. Healthy poultry are bright and active, dry in the eyes and nostrils, their feathers are glossy and elastic, and the combs and wattles are firm and brilliant red. Age is indicated by duskiness of the feathers, ruggedness of feet, and size of claws.

The diseases to which fowls are liable may be briefly enumerated as follows:

Roup.—This is probably the most common and often appears among birds crowded together in ill-ventilated houses and on damp runs.

It is characterized by an offensive discharge from the nostrils and eyes, swelling round the eyes, and purpling of the wattles. Often there is a distinct, false membrane, formed by exudation, which may extend down the windpipe or along the alimentary tract. The disease is very contagious, and even the eggs laid by Roup hens are not wholesome. Without doubt this disease is often true tuberculosis. Search for nodules in the liver and intestines. There is a less fatal and less serious form of disease known as Dry Roup, which is said to affect old birds chiefly.

Pip is indicated by a white, horny skin growing on the tip of the bird's tongue. It is not serious but shows the bird is out of sorts, and may be regarded more as a symptom than a separate disease.

Chip is the name given to a kind of fever common in dairy farms, and seemingly derived from damp and cold. Young chickens are especially liable to it. They sit stationary in corners, crying incessantly "chip, chip."

Turn is apoplexy, affecting birds over-fed and taking little exercise. Without warning, the fowl totters and falls to the ground or drops from his perch. Death takes place unless assistance is promptly rendered.

Scour is a diarrhoea due to various causes. It often results from improper food or sudden change of food. Without treatment the bird may soon succumb.

Gapes is a distressing malady of domestic fowls and pigeons, caused by small nematode worms in the windpipe.

The disease is so named from the gaping attitude assumed by the affected bird. It is readily communicated, and often fatal.

Special attention should be given poultry in the rainy season.

In all these diseases prevention is better than cure. The use of a good poultry tonic at frequent intervals will help to build up a strong resistance to disease in your birds. That sold by the Jamaica Agricultural Society at 6d. per ¼ lb. packet can be recommended in view of its satisfactory record over a long number of years.

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NEW DEVICE A BOON TO CALF-REARERS.

There are many methods of calf-rearing. From the calf's point of view, of course, the best system is rearing on the mother. Only seldom however, can that be economic or practicable.

Rearing on the pail, giving milk alone or a gruel mixture, is practised in the majority of cases. This method, too, has its drawbacks, entailing a considerable amount of trouble.

At the start there is the difficult job of teaching the calf to drink from a bucket. Gradually, however, the youngsters learn the knack. But as it goes against their natural habit, they tend generally to gulp down the milk too greedily. Digestion frequently suffers, and the rate of growth is effected.

Largely because of these drawbacks, the dry system of feeding has gained in favour of late years. The calves are put on to meals or finely-broken cakes at the earliest possible age.

This saves trouble, and often expense as well. But we cannot get away from the fact that milk is the natural food of calves and that they must live on milk during at least their first month.

Lately an invention has been placed on the market whose use does away with the above-mentioned drawbacks of feeding milk to calves. This device known as the "Little Mother Feeder," gives much the same advantages as suckling the dam, but is, of course, without the disadvantage of "spoiling" the cow.

Calves can be reared from birth by the new method, or introduced to it at any later time.

Easy to Clean.

This feeder consists simply of a cast-iron vessel whose interior is porcelain enamelled so as to make cleaning easy. It holds 10 pints of milk which can be drawn off to the last drop by calves by means of two detachable teats of toughish rubber fixed to the bottom of the vessel. A closely-fitting but removable lid completes the outfit.

For use, the feeder must necessarily be firmly attached to a wall or to a post or beam. It has two projecting "ears," with screw holes, for this purpose.

The great advantage of the device is that the calves obtain their milk in the natural way as by sucking their dams. They quickly adapt themselves to the artificial teat, which yields milk fairly easily, but not so easily as to allow gulping.

The Little Mother Feeder was devised by a farmer who has himself reared hundreds of calves.

—*Smallholder*, June 12, 1937.

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DRINK MILO AND MILK HOT OR COLD

ON KEEPING GRAIN.

Recently we have been inundated with requests to buy hundreds of bushels of corn and some peas, but on account of full stock, very reluctantly have to refuse.

Everywhere in Kingston appears to have all they require and there is disappointment to the vendors.

Now, if these folk would only make the effort to keep their grain for a short time and so allow stocks to be used up, there will come a day when sales can be made.

There are a few persons who have taken the advice as put forward in this Society's Journal from time to time as to methods of keeping their grain, and once they have tried them they are so satisfied that they continue using them. To keep this type of product only means that one should have a container which, when the cover is closed down, should be airtight. Carbon Bisulphide, Cyanogas, or Napthaline can be used to keep all insects from destroying the grain.

The method of applying these can be given in just a few words.

Carbon Bisulphide. This is a liquid which gives off a heavy gas which sinks through the grain and destroys all insect life in it. It is highly inflammable, and care should be taken not to have any flame or lighted cigarette near to it. A small portion should be put in a saucer and this placed on top of the grain and the lid closed. 12 to 24 hours are sufficient for an application.

Cyanogas. This is a powder which gives off deadly fumes when it comes in contact with the air. A small amount should be used in a dry container and placed at the bottom of the bin, or box or barrel, and the lid closed down as before. The gas from this fumigant rises, hence the necessity for placing it low down. Care should be taken not to inhale this and whenever a portion is taken out, the tin should be closed tightly immediately.

To place this Powder in position it is necessary to use a tube of some sort, and a bit of pipe of not less than a 2 ins. bore, or a bit of bamboo with the knots broken out, both to have small holes bored in the sides, will do. The container with the Cyanogas should be first placed at the bottom of the bin, etc., and covered with a bit of board with holes, smaller than the grain, bored through it, and it is on this that the tube will rest above the Cyanogas.

If packages containing material to be fumigated can be put into a small airtight room, Cyanogas can be more easily applied, or if in bags these can be placed together and covered with a canvas tarpaulin which must be weighted down to the ground and the fumigant placed underneath.

Napthalene. This is used either in crystals or in balls, commonly termed "Camphor Balls." If crystals, these can be put into small cloth bags and distributed through the grain beginning by placing a couple at the bottom of the container before the grain is put in and as the container is being filled, more bags are added.

The balls are used in the same way. None of these fumigants need be kept continuously in the grain and very large quantities should not be used, as the seed germ may be killed and the product also rendered unfit for food.

PREPARING LIQUID MANURE.

Liquid manure may be made in various ways from farm or stable manure. As a general rule the manure should be old stuff which has been lying under cover and rotting for a good length of time.

In one method the manure is allowed to "steep" for several days or weeks. Two large forkfuls or so are thrown into some five or six gallons of water, it is then stirred until well broken up and allowed to settle.

A pint of this strong liquid in a gallon of water makes good liquid manure.

A less messy way is to put the manure into a coarse bag and allow this to hang in the barrel or tub of water for some time. The ultimate result is very much the same If the liquid is strong it will be necessary to dilute it as above.

Liquid manure ready for use at once is made by stirring a trowelful of manure into a gallon of water. It is always better to let this stand overnight or longer, but it may be allowed to settle and then applied.

It should be noted here that liquid manure is the clear, tea-tinted liquid and not the sludge or sediment. Such sediment should be thrown on the compost heap, where it will rot into humus.

At all times liquid manure must be weak; if there is any doubt about the matter, err, if anything, on the weak side.

Liquid manure can be made from powder fertilizers by stirring ½ to 1oz.—according to the maker's instructions—into water.

To stimulate growth, particularly when plants are small, backward or inclined to make no definite progress, nitrate of soda, sulphate of ammonia, saltpetre, etc., may be used at ½oz. per gallon of water

—*Smallholder*, June 5, 1937.

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JERUSALEM ARTICHOKE.

Like the sweet potato, Jerusalem artichoke is a crop which should receive much more attention than it does at present, more particularly by those engaged in pig-raising in the western farming districts, for not only is it highly drought-resistant but its tubers are highly nutritious as well. The yield, which is controlled by the soil and seasonal conditions, may range from 300 to 500 bushels or more per acre, and although the plant does best on good friable loams, it will thrive on sandy, gravelly, or clayey soils, which enables the poorer patches of soil on a farm to be put to a profitable use.

The area intended for its reception should be prepared in much the same way as if it were intended for potatoes. It may be planted in early spring in furrows three feet apart, with the sets two feet apart. This spacing with medium-sized tubers will entail the use of between 4 and 5 cwt. per acre.

As with maize and potatoes, until the crop is 4 inches high all cultural operations can be carried out with tined harrows working across the drills. Afterwards the cultivator will have to be used, as the condition of the soil and weed growth necessitates.

When the tops die, the crop is fit for harvesting, which can be accomplished most profitably by turning pigs on to the field. If it is intended to plant the same area in the succeeding season, it will be necessary to remove the pigs before all the tubers have been eaten, if replanting is to be avoided. The area should be cultivated in the spring. Subsequent working will be similar to that of the first season. The white and red varieties are considered to be the most hardy and prolific.—R. SOUTTER, Agricultural Research Officer.

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BRANCH NOTES.

CLARENDON : John Austin.—Annual Meeting held 31.5.37. Present were the President, the Secretary, the Treasurer, seven other members and one visitor. Meeting opened with prayer, after which the minutes of the previous meeting were read and confirmed. Matters arising : Discussion of the sugar situation. Correspondence followed, after which the Secretary gave his report and that of the Treasurer. These were adopted. Many matters were discussed, including the improvement of Parochial Road No. 35. Some of the members present paid their fees. The A.P.s informed the meeting that they had been tested by the Inspector of Police, and promised further information from him. All the Officers were re-elected. The National Anthem terminated the meeting.

Chapelton P.O. H. S. HALSTEAD,
Secretary.

Lowe Wood.—Annual Meeting held 18th June. Present U. Theo. McKay, Esq., Instructor J. A. Graham, 20 members, 5 children and 1 visitor. The chief items were an address by U. Theo. McKay, Esq., and the Secretary's and Treasurer's Reports. Mr. McKay, in a masterly address, exhorted the members to take stock of their attendance, the Instructor's visits to their holdings, and improve their methods of cultivation. He was heartily thanked. Election of Officers resulted as follows :—Mr. Lawrence Thomas, President; Mr. Aston Campbell, 1st V.-P.; Mr. S. E. Edmondson, Secretary; Mr. Geo. Mitchel, Asst. Secretary; Mrs. O. T. Edmondson, Treasurer. Mr. S. E. Edmondson was elected as Delegate to the Half-Yearly Meeting to be held in July, and the Hon. J. A. G. Smith, K.C., M.L.C., was nominated to fill the vacancy on the Board of Management, caused by the resignation of Major A. R. Moxsy. "The King" brought the meeting to a close.

Spaldings P.O. S. E. EDMONDSON,
Secretary.

Moravia.—Meeting held 1st June. Present : Rev. H. T. Cuthbert, President, Instructor J. A. Graham and 12 members. Two new members were enrolled. The Instructor spoke on the value of fertilizers, and how they could be profitably used on small plots. Deep trenching was also advised, and many members consented to carry out the suggestions. The prevalence of banana stealing was warmly discussed. Authorised Persons reported 5 arrests and 3 convictions. Instructor Graham further encouraged the resuscitation of the Juvenile Branch, and this was agreed to. Plans regarding the celebration of the 25th Anniversary of the Branch on July 9 were made. The Secretary was asked to write inviting prominent gentlemen named, and nearby Branch Societies to this Jubilee. A small committee of five was appointed to make arrangements. Minor matters were dealt with and the meeting adjourned.

Moravia P.O. G. R. GAYLE,
Secretary.

Pleasant Valley.—Meeting held 15.6.37. Minutes of last meeting read and confirmed. Correspondence received from Swiss Stores and Messrs. Geddes Grant, advertising Fertilizers; also from Head Office re Half-Yearly Meeting and resignation of Major A. R. Moxsy from the Board of Management. The following resolution was moved : That the Pleasant Valley Branch J.A.S. places on record the yeoman services rendered from time to time by Major A. R. Moxsy. His resignation from the Board of Management will be a great loss to the Board and the community in general. It is hoped that he may be able to find it possible to render more services as he has done in the past. Nomination to fill Major Moxsy's place was made in the person of Mr. H. G. Dunkley. Mr. C. C. Flyter, having obtained a majority of votes, was elected to serve as delegate to the Half-Yearly Meeting in Kingston. An invitation was tendered from the Instructor to the members to visit the Yearly Agricultural Course to be held at Hope Farm. He dealt with the "Tobacco Industry," his topic for next meeting being "Fertilizers." One Authorized Person reported 1 case of attempted arrest, the other reported "all correct." After Roll Call, the meeting terminated with "The King."

May Pen P.O. (Mrs.) A. A. FLYTER,
Secretary.

Rock.—Meeting held 23rd June. Mr. T. C. Swainson, President, occupied the chair. After the singing of the opening Hymn, a prayer was offered. The Minutes were read and confirmed and as matters arising from the Minutes the Secretary read a letter from the Secretary of the C.B.A. stating that the Postmaster General has the Post Office for Rock under consideration. Instructor Virtue gave a well thought out address on Tobacco and the use of Fertilisers. Mr. Patterson was

elected as Delegate to half-yearly meeting on 22nd July. Authorised persons reported two cases of praedial larceny. National Anthem.
Osborne Store P.O.

H. D. THOMAS,
Secretary.

Milk River.—Meeting was convened in the Milk River Govt. School on the 14th July. Officers present were Messrs. T. Barrett, President, Enos Campbell, 2nd Vice-President, E. Reid, Treasurer and S. N. Briscoe Secretary. Mr. E. V. Metcalfe-Vaughan was asked to take the chair, and seated with him were Messrs. G. H. Dunkley, J.P., Chairman of the Clarendon Parochial Board and President of the C.B.A., F. Gordon Somers, Health Supervisor for the County of Middlesex and Instructor Virtue. The Chairman in introducing the "Special speakers" paid glowing tribute to their position and worth to the parish. He congratulated Mr. Dunkley on his being elected Chairman of the Parish Board. The minutes of the previous meeting were taken, after which Mr. Dunkley gave a stirring address on Agriculture and its usefulness. He also stressed the importance of Co-operative Loan Banks, and gave useful hints in the working of them. Mr. Somers gave an inspiring talk on Malaria. He was thanked for his address. Important matters discussed were—The Labour Problem—it being pointed out that the chief source of employment was the United Fruit Co's Farms and work is now being limited; Mango Project, Land Settlement and the Water Question. Election of a Managing Committee followed. The meeting closed with the singing of the National Anthem.
Milk River P.O.

S. N. BRISCOE,
Secretary.

Mt. Airey.—Meeting held 13.7.37. After the preliminaries matters arising from Minutes were dealt with, the proposed Juvenile Branch and Literary Club came up for discussion. Correspondence included letters re Authorised Person, Mt. Airey Water Supply and the Agricultural Service Scheme. The house was favoured with a song by the Secretary for which she was heartily thanked. The Reserved Fund Box was dedicated. Instructor Virtue's address was based on his observations during the day as he went from field to field assisting members to get the best out of their crops. He dealt chiefly with budding and pruning and his address was made more practical by his making use of the blackboard to illustrate what he said. All present felt a great deal of gratitude to the Instructor. A vote of thanks was moved by the Secretary and conveyed by the President to him. Authorised Person reported—All correct.. There was a good turn out of members and visitors, two of the latter becoming members during the course of the meeting. After the roll call the singing of "The King" brought a profitable meeting to its close.
Richmond Park P.O.

M. E. A. DAWKINS,
Secretary.

HANOVER : Jericho.—Meeting held 9.6.37. Present : Instructor C. C. Hastings, Mr. L. T. Virtue, President, 10 members and many visitors. Miss Z. McKenzie, Secretary, gave a report on the Half-Yearly Meeting at Sandy Bay. Instructor Hastings and Mr. S. Shaw also enlarged on the Report. Chief subjects discussed at that meeting were : (a) Fertilizers, which subject was masterly dealt with by Supervisor Hanson; (b) Relationship between Agricultural Society and Parochial Board, by Rev. H. U. Messam; (c) Industry; (d) A Show, to be held 18th August, 1938. Delegate for this Branch to Half-Yearly General Meeting will be Rev. H. U. Messam. Owing to bad weather, election of officers had been put off for this meeting. President and Secretary re-elected, and Mr. S. Grant appointed Treasurer. The Instructor addressed the House. He congratulated members on their choice of officers. He also spoke on Sugar Conference and the likelihood of a gloomy outlook for the cane-growers should the produce of sugar in Jamaica be lessened. The first shipment of Nasceberries on the 23rd and 24th May from Montego Bay was mentioned. Mr. Virtue moved a vote of thanks. It was agreed to that meetings should be held every two months instead of every month. Plans were made to have a big meeting inviting gentlemen like Mr. Rothnie and Mr. Webster to speak on the proposed Show. Meeting terminated with the singing of the National Anthem.
Jericho P.O.

(Miss) Z. MCKENZIE,
Secretary.

MANCHESTER : New Green.—Annual Meeting held June 3. Present . Mr. H. A. Darby, Agricultural Instructor, Mr. H. P. Gibson, 1st V.-P., in the Chair, the Secretary, 7 other members and 4 visitors. The meeting began with prayer, followed by the reading and the confirmation of the minutes, and correspondence. Mr. Charles Powell was appointed Authorized Person for Grove Place District. The Secretary's and Treasurer's reports were presented and adopted. Election of Officers resulted as follows : Mr. E. M. Clark, President; Mr. H. P. Gibson, 1st V.-P., Mr. R. M. Swaby

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2nd V.-P., Mr. Joseph Locke 3rd V.-P., Mr. H. E. Gayle, Secretary and Treasurer, Miss R. C. Vassel, Assistant Secretary. A resolution asking that the Jamaica Government Railway make a halt at Grove Place was passed. A Committee was named to consider ways by which the Branch might be made more active and useful. The Instructor gave a splendid address on Fertilizers, for which he was thanked. The subject proved so interesting that it was decided to place it on the agenda of the next meeting.

Mandeville P.O. H. E. GAYLE,
Secretary.

Devon Potato Growers.—Monthly meeting held 4th June. 16 members were present, also Instructor J. A. Graham. Correspondence received attention. Notice was given of the Half-Yearly General Meeting of the J.A.S. to be held in Kingston. Mr. L. A. Spence was appointed delegate to that meeting. A resolution asking for Police Protection was passed to be placed on the agenda of the meeting of the Manchester Branches Associated. Members were asked to take turns in caring for the Society's goat. The singing of the National Anthem brought the meeting to a close.

Devon P.O. J. I. ROBINSON,
Secretary.

Ebenezer.—Meeting held 4th June. Instructor Darby was appointed Chairman, as there were no Presidents present. The Instructor introduced Mr. Roy Thompson, the newly-appointed teacher for the school and praised his work in the Cross Keys Branch. Mr. Thompson in replying thanked the Instructor, not only for his kind remarks, but for his great help to the above-mentioned Cross Keys Branch, especially for securing for this Branch the very valuable services of Headman Wright. The election of Officers resulted as follows : Rev. C. N. Andrews, President; Mr. Horace Mitchell, 1st V.P., Mr. L. C. Bloomfield, 2nd V.-P., Mr. Colin Thompson, 3rd V.-P., Miss P. I. Isaacs, Treasurer, Mr. Roy Thompson, Secretary. The President paid tribute to the zeal of Instructor Darby. Many other matters of interest were dealt with and the meeting concluded after the singing of "The King."

Knockpatrick P.O. ROY THOMPSON,
Secretary.

Fairfield.—Meeting held June 17. There were present, Rt. Rev. A. Westphal, Chairman, Mr. Charles Robinson, Vice-Chairman, Miss C. Peart, Treasurer, the Instructor and 5 other members. The meeting was opened with prayer, and the minutes of the last meeting were read and confirmed. The Treasurer reported a balance of £5 in hand. There were about 10 new members added to the Branch for the year 1937-38.

The Instructor spoke on the Blue Cross Society, which was recently formed in Mandeville. He spoke very strongly on Cruelty to Animals in Jamaica. He also asked that a party of Branch members, school children and others who are interested in agricultural work, visit a nearby farm on Thursday, July 29. He received the thanks of the meeting, which was brought to a close with the Benediction.

Lincoln P.O. H. H. WILLIAMS,
Secretary.

Mizpah.—Meeting held 14.6.37. Present were : Instructor Graham, Rev. J. W. Kneale, President, 13 other members, and the Secretary. Minutes of previous meeting and also of special meeting read and confirmed, and matters arising discussed. The Instructor advised the Secretary to write to the Parent Society to find out what had been done in the matter of purchasing a ram for the Branch. Correspondence was taken : (a) A letter from the M.O.H. informed that Dust Bins would soon be provided for Walderston; (b) Letter from Moravia Branch asking for delegates to their 25th Anniversary on July 9. In reply the Secretary was asked to state that the Branch would be represented; (c) Letter from Parent Society re Half-Yearly Meeting. Mr. J. S. McKenzie was appointed delegate. Mr. McKenzie, delegate to the Half-Yearly meeting of the M.B.A., gave a splendid report. The following matters were referred to : Pine Industry, Land Settlement at Broken Hurst, and the setting out of a "Model Settlement"; Citrus Pests and the Fiddler Beetle; the Imperial Cwt., Summer Course at Hope, overfilling of citrus boxes, and the covering of the Mandeville Market. Members were advised to try a plot of Pineapples. Figures were quoted to show that the industry could be a very paying one. The importance of the Summer Course at Hope was also emphasized. Teacher Roberts suggested that Mr. Lecky, the Instructor in Dairying, be asked to the next meeting to give an address. All members agreed to this. The Instructor spoke on many important matters. He noted the names of those interested in the Vegetable Association and the area they intended to plant. He advised the use of Fish Manure and the use of fertilizers in general. He spoke at some length on the growing of Tobacco—the preparation of the seed-bed, the sowing of the

seeds, and the care of the Nursery. He made reference to minor crops, e.g., guavas and pine apples, and pointed out that both should be cultivated. He was thanked. Mr. H. E. Lewis of Enfield, New Port P.O., was nominated to the Board of Management to fill Major Moxsy's place. After a few other matters were dealt with, the meeting adjourned.

Williamsfield P.O. U. C. WOLFE,
Secretary.

Porus.—Meeting held 5th July. There were eleven members and two visitors present, viz., Rev. Tomlinson and Mr. L. Phillips. Mr. T. N. Davis, 2nd Vice-President occupied the chair. Minutes of previous meeting read and confirmed. Matters arising therefrom dealt with. Arising out of the Minutes was a letter to be written to the United Fruit Co. and Mr. N. W. Manley. It was agreed to that the letter be sent to the U.F. Co., thanking them for their kind offer to the peasantry of Jamaica. Mr. Phillips was asked to give an address on the planting and production of Tomatoes, Cabbage, Pepper, Garden Eggs, Corn, etc., also Citrus. A vote of thanks was moved for the speaker. Mr. Phillips suitably replied and he said whatever he could do for the benefit of his people, he was always willing to do. Two Authorised Persons present reported. The meeting terminated by the singing of the National Anthem.

Porus P.O. C. ROWLAND,
Secretary.

Royal Flat.—Present at the meeting were :—N. Nash, Esq., J.P., presiding Instructor Darby, Officers and Members. Prayer, Minutes, Correspondence. Lecture by Mr. Darby on Milch Kine. Many questions asked on points covered by Lecturer. Discussion on Mr. Coke's scheme for the Co-ordination of the Agricultural Services in the Island. Delegate to half-yearly meeting was appointed and instructed to vote for Co-ordination of the Service in Jamaica. New Members proposed and accepted. Minor matters dealt with before meeting terminated with National Anthem.

Wiliamsfield P.O. H. LISTER JOHNSTON,
Secretary.

MANCHESTER : Mile Gully.—Meeting held 28.5.37 Minutes of the previous meeting here read, and after having been adopted were confirmed. As arising out of the minutes the President spoke of the attack of the Black Spot Disease on the banana. He informed the meeting that by spraying and cutting back some of his bananas, and after putting in fertilizer, the plants recovered. The Instructor said the disease made its first appearance in St. Elizabeth. It also appeared in St. Catherine and at Old Harbour. The Country Fires Law was discussed. Mr. W. J. Nairne was nominated and duly appointed delegate to the M.B.A. meeting in Mandeville. Fertilizers were discussed. Drainage : a healthy and profitable discussion took place on drainage of fields. Many questions were asked and satisfactory answers given. Mr. W. J. Nairne was nominated and elected delegate to the Half-Yearly General Meeting in July next. Minor matters were dealt with, the roll marked, and the meeting terminated.

Mile Gully P.O. T. A. MORRIS,
Secretary.

Victoria Town.—Meeting held 15th June. Present were : Rev. J. W. Grant, in the Chair, Instructor Darby, 9 members, the Secretary and Asst. Secretary. Minutes of last meeting read and confirmed. As matters arising therefrom the Secretary reported that all fees had been paid in, and receipt book purchased. After a little discussion it was moved, seconded and unanimously agreed that a resolution be sent to the Manchester School Board and the Honourable Member for the Parish, asking their aid in trying to get the community a purely Government School, so that suitable sanitary conveniences and a proper water supply could be available for use of school children. The Instructor asked that Mr. Theo. Reid and another try to get number of stocks on members' holdings available for budding. The Secretary was advised to issue receipts to all members who had paid in fees. The matter of a special crop for the district was discussed. Meeting adjourned with the singing of the National Anthem.

Victoria Town P.O. (Miss) L. A. ALLEN,
Secretary.

Zion Hill.—Meeting held 11.6.37. Present, in spite of heavy rains : the President, Mr. A. Brown, 24 members of the Branch, also Messrs. T. Joseph, J.P., and A. J. Anderson—both members of the Parochial Board, Manchester, and several visitors. Valuable addresses were delivered by the two visitors, encouraging the Branch to forge ahead agriculturally, seek the advice of the Instructor from time to time, and try to produce the best. There was a slight discussion on the proposed road extension through the district and a water supply for Bombay District. One member of the Branch proposed purchasing a "pedigreed" pig from Grove Place Farm. Authorized Persons reported "All Correct." Apology for absence from the Instructor was read. Meeting ended with the singing of the National Anthem.

Williamsfield P.O. E. ST. LEO. STEPHENSON,
Secretary.

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PORTLAND : Bybrook.—Meeting held 10.6.37. Present : S. E. Patterson, President. R. M. Burgess, 1st V.P., E. G. A. Brown, 3rd V.P., 9 other members, 8 visitors and the Secretary. The meeting was opened with prayer by the President. The minutes of the last meeting were read and confirmed, and matters arising therefrom were discussed. Mr. B. E. Gutzmore was appointed as delegate to the Half-Yearly General Meeting to be held in Kingston. A.P. Lee reported 1 case of larceny, and A.P. Cawley reported "All Correct." Matters pertaining to Agriculture were discussed. A debate was suggested for next meeting. After minor matters were dealt with the meeting terminated with the singing of the National Anthem.
Skibo P.O. J. V. WATSON,
Secretary.

Maidstone-Bourbon.—Meeting held June 9. Present were : Mr. N. V. Thompson, M.P.B., President; Mr. Wm. Casey, 1st V.-P., the Secretary, five other members and Mr. C. L. Wilson, the new Headmaster of the Maidstone School. The President welcomed all present. Arising out of the minutes the following were dealt with : Darley Land Settlement; a grindstone for the Branch; delevopment of a local Milk and Fish Industry; and the change of date of Branch meetings. Mr. Joseph Linton was elected to fill the post of 3rd V.-P. in place of Mr. B. Somers. Letters from Messrs. W. Harper Watson, J.P., and A. F. Sence, Secretary of Central Portland Branch, were dealt with, also one from the General Secretary J.A.S. re Half-Yearly Meeting. Mr. N. V. Thompson was elected delegate to the Half-Yearly General Meeting. The singing of the National Anthem terminated the meeting.
St. Margaret's Bay P.O. I. E. SOMERS,
Secretary.

Regale.—Meeting held May 25. Present were : Messrs. G. H. Wright, President; C. Hamilton, 2nd V.-P., 14 members, 1 visitor, the Assistant Secretary and the Secretary. Meeting was opened with prayer by the President who extended his usual welcome to all, after which the minutes were read and confirmed and matters arising discussed. Matters arising : (a) Concert. This was deferred until next meeting. (b) Social for members only, to be carried out 18th June. (c) Experimental Plot. As this plot cannot be obtained from Government free, the house decided not to take it on the terms quoted by the Surveyor General. Fees were paid in by three new members. Authorized Persons : Two A.Ps. were present. Mr. Theo. Josephs reported "All Correct"; Mr. Arthur Henry reported an attempted arrest for larceny of bananas. Correspondence : Two letters were read, and the new Book of Rules for the Society introduced. (a) Letter from Portland Branches Associated re Half-Yearly Meeting at Port Antonio; (b) Letter from Head Office re Half-Yearly Meeting in Kingston. Mr. Charles Hamilton was appointed as delegate to the Port Antonio meeting, and his expenses met. The closing remarks were given by the 2nd V.-P., after which the meeting closed with the National Anthem.
Spring Hill P.O. (Miss) G. I. CAMPBELL,
Secretary.

Tranquillity.—Annual Meeting held 19th May. Present were : Mr. U. C. Williams, President; J. N. Taylor, Esq., 1st V.-P., B. McLeary, Esq., 2nd V.-P., 10 other members, 5 visitors and Mr. J. K. Giscombe, Asst. Secretary, acting as Secretary. After the reading of the minutes of the last Annual Meeting, the Treasurer's and Secretary's reports were read and adopted. The President gave a very educative address. Very big appeals were made for an increase of membership this year. Hopes are entertained that this Branch will have an attendance of fifty in the course of the year. Election of Officers resulted thus : Messrs. M. C. Williams, President; J. S. Buchanan, 1st V.-P.; B. McLeary, 2nd V.-P.; C. S. Aljoe, Treasurer; N. W. McClery, Secretary; J. K. Giscombe, Asst. Secretary; L. H. Barnes, C. Jackson, N. Thomas, S. Robinson, and J. Murray, Members of Managing Committee. All Officers and Committee Members gave short addresses, promising to help in every way possible to build up the Branch. The Roll was called, after which the adjournment was moved and the singing of the National Anthem brought the meeting to its close.
Balcarres P.O. N. W. MCCLERY,
Secretary.

Belcarres.—Monthly meeting held 23.6.37 Present: Mr. F. E. Nesbitt, Chairman, 9 other members and the Secy., also the Instructor, Mr. A. T. Wilmot. An apology for the Asst. Secy's absence was received. Minutes of the last meeting were read and confirmed. Arising therefrom (a). The Pound at Balcarres:—It was decided to ask the Parochial Board, Portland, through the Parent Society to erect a shed for the protection of animals taken there, from rain and sun, also a dividing fence to separate sick from healthy animals. The road leading from Mt. Pleasant Gap to Logie was considered. The Tank at Balcarres :—Mr. J. O. Baugh was asked to interview the Supt. Par. Board re its condition, and report at next meeting One Authorised Person present reported "all correct." Mr. J. O. Baugh moved a vote of condolence re the death of Major W. H. Plant, a former President of the Portland

Branches Associated. This was seconded and the House stood for two minutes. The Instructor lectured at length on "Fertilization" and its benefits. A vote of thanks was accorded him. It was then decided to visit Mr. J. A. Sullivan's holding at next meeting. The Instructor was interviewed by Mr. Ed. Innis re the sale of Cassava Tubers. The Instructor advised the planting of limes. The President gave notice of his intention to invite the Governor to the district. After other matters were discussed the meeting terminated.

Balcarres P.O. (Mrs.) ADA V. NESBITT,
Secretary.

Breastworks.—Present: Mr. D. T. Buchanon, President, Instructor G. R. Graham, 14 Members and 9 Visitors. After the President delivered his opening address, the members asked that the House show its sympathy to Mrs. W. H. Plant in her recent bereavement attendant on the loss of her husband who in his lifetime was a particular helper in the extension of Agriculture. The House at the request of the President stood for 2 minutes. Communications were read from the Hon. H. E. Allan—respecting his Honoray Membership, and Mr. F. V. Grossett with regard to his kind gift towards the payment of the Tilly Lamps. Many other items were discussed including the Toms Hope Land Settlement Scheme. The Instructor gave a very lengthy and valuable address detailing the Banana, viz., Industry and the Banana Flour. After Roll Call the meeting was brought to a close with the singing of the National Anthem.

L. F. ERGAS,
Secretary.

Belvedere.—Meeting held 11th June. Present: 10 members and the Instructor, Rev. J. B. Boyce, 2nd V.P. presided. Minutes of the last Annual meeting were read and confirmed. Matters re Penny Bank formation, obtaining a Jersey Bull, replacement of the Branch's Ram, were discussed. The Treasurer's statement was presented, showing 5/- balance from 1936-37, and £1 5s. for the current year. Mr. W. T. McKay was appointed delegate to the forthcoming Half-Yearly General Meeting. The Instructor did spraying demonstration earlier in the day and addressed the meeting on Minor Industries. Mr. Septimus Muir was elected to serve as an A.P. Meeting then adjourned.

Prior Park P.O. W. T. MCKAY,
Secretary.

ST. ANN: Claremont.—Meeting held 1st July. Present: Captain Townend, President, Instructor Atkinson, Messrs. P. M. McCalla, (Secy.). D. H. Brown. (Treas.), other members and many visitors. Great interest was displayed in securing "Rural Retreat"—a property near Claremont as Land Settlement. Over 140 applicants needing more than 600 acres. Strong Committee formed to push the matter, and to suggest to Government that Agricultural Camps be etablished in connection with Land Settlement with a view of relieving unemployment and teaching Scientific methods of agriculture. The Instructor delivered practical and helpful address on the cultivation of corn. He was warmly thanked. Ten new members were enrolled. The Secy. was appointed delegate to the half-yearly meeting. The King.

Claremont P.O. P. M. MCCALLA,
Hon. Secretary.

Sunbury Co-Operative.—Meeting held on 8th June. Present: Instructor J. A. Graham, President and all Officers, 9 members and 6 visitors. The matters dealt with were: (a) the Growing of Citrus; (b) the need of a Sanitary Convenience; (c) Fertilizers. The meeting terminated by the singing of the National Anthem.

Spaldings P.O. NARRELD KNIGHT,
Secretary.

ST. CATHERINE: Buxton Town.—Meeting held 2nd June. Mr. L. G. Powell presided. Attendance small on account of rain. Preliminaries carried through, and correspondence dealt with. Delegate to Half-Yearly Meeting of the St. Catherine Branches Associated was appointed. Two resolutions were drafted—one for the Half-Yearly Meeting and the other to be forwarded to the Parent Body. Other matters were dealt with before the meeting terminated.

Linstead P.O. A. B. WALTERS,
Secretary.

Bellas Gate.—Meeting held 14th June. There were present: Messrs. G. E. Markland, President, M. Golding, 2nd V.-P., Instructor Byles, I. Rhone, Headman, A. A. McCurdy, Secretary, Miss G. M. Fletcher, Asst. Secretary, 6 other members and a few visitors. The Annual Meeting was held on 17th April. The minutes of the last meeting were read and confirmed. Matters arising therefrom were dealt with. There were discussions re Roads, Yaws, Water Supply, Parochial Dispensary, and the ram to be bought by the Branch. Correspondence was read and dealt with. Delegates were appointed to attend the meeting of the Associated Branches at Bog Walk. The

Instructor addressed the meeting. A vote of thanks was accorded him. The Sanitary Inspector who was present as a visitor, gave a concise address, for which he was thanked. Mr. Sidney Oliver was elected an Authorized Person. A few more members were added to the roll. Minor matters were dealt with and the meeting adjourned with the singing of the National Anthem.

Bellas Gate P.O. A. A. McCURDY,
Secretary.

Springfield.—Annual Meeting held during June. The chief feature of the meeting was the President's address. He told how the members were willing to build a Hall for the Branch. During the year three A.Ps. had been appointed D.Cs., 2 in St. Mary and 1 in St. Catherine. The 1st V.-P., Mr. A. S. Ross, added to the President's remarks. It was decided that all the officers of the Branch be re-elected.

Guy's Hill P.O. S. C. MATTHEWS,
Secretary.

Ewarton.—Meeting held 1st July. There were present: Mr. F. A. Cooke, 3rd Vice-President in the chair; Instructor Byles, Mr. Francis, Agricultural Foreman, many members, the Secretary and several visitors. After the usual preliminaries the Secretary read a letter and telegram from the Hon. E. A. McNeill relative to the sale of banana suckers from Charlton Property which has been acquired for Land Settlement. The Instructor congratulated the Society on the procuring of a new lamp and he subscribed to the lamp fund. Mr. A. C. Cooke moved a resolution relative to insanitary handling of bread for public consumption. The resolution was passed. Mr. F. A. Cooke, who represented the Branch at the half-yearly meeting of the St. Catherine Branches Associated, read a comprehensive report. The Instructor spoke on the care of banana fields and explained how the banana borer could be controlled. The meeting closed with the singing of the National Anthem.

Ewarton P.O. W. B. LESLIE,
Secretary.

Bowers Wood.—Meeting held 8th July. Present: Mr. Edward Mills, 1st Vice-President who presided, and Agricultural Foreman Francis. Matters arising out of the Minutes—(a) Delegate's expenses to half-yearly General Meeting in Kingston. A letter was received from the President stating that he was ill, and his intention of resigning. Three months leave of absence was given him. Report of Delegates to Half Yearly Meeting of the St. Catherine Branches Associated was read and adopted. Reports of Authorised Persons and Managing Comittee were received. After minor matters were dealt with, the meeting adjourned with the singing of the National Anthem.

Bog Walk P.O. PETER E. J. DAVIS,
Secretary.

ST. ELIZABETH : Aberdeen.—Meeting held 3rd July. Mr. J. A. Reid, 2nd V.P. presided. There were present 11 visitors who subsequently became members, and 6 members. Minutes read and confirmed. Matters arising therefrom (a) Loan Bank, (b) Branch ram. Resolutions were moved re Telephone Office and Registrar of Births and Deaths. Minor industries were discussed, and members asked the Secretary to find out from Major Moxsy particulars re tomato planting. The Secretary was advised to write the Instructor asking him to be present at the next meeting and to address members. Roll call and singing of National Anthem terminated the meeting.

A. RONALD BAYLEY,
Aberdeen P.O. Secretary.

Rose Hall.—Meeting held Friday, 25th June. Present : Mr. Adolphus Myers, President; the other officers of the Branch and over 100 other members and visitors interested in the Warminster Land Settlement Scheme. Minutes of previous meeting read and confirmed. Delegates to the meeting of the St. Elizabeth Branches Associated gave an interesting report of the various discussions and resolutions dealt with. Mr. Claude Blythe of the Bull Savannah Branch gave an exhaustive talk on the "Growing of Tomatoes." The meeting greatly appreciated the helpful information and advice he gave. Later on, immediately after the Branch meeting, Hon. E. V. Allen spoke on the Warminster Land Settlement Scheme and earned the thanks of his audience for his promise to endeavour to carry the scheme through.

FRED. H. JONES,
Rose Hall P.O. Secretary.

Fyffe's Pen.—Meeting held July 8. Present were Mr. D. A. Walters, President; Mr. G. W. Wray, Instructor; Miss J. E. McIntyre, Treasurer; the Secretary, Mr. L. H. E. Reid and 12 other members. The President offered prayer and extended a cordial welcome to all. After the reading and confirmation of the minutes, correspondence was read. Rev. S. J. Swaby wrote giving permission to the Branch to hold its meetings in the Fyffe's Pen Schoolroom. The Secretary was instructed to write thanking him. Mr. Wray then gave his address. He said

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that the Branch Society should really be considered as a continuation school of Agriculture, and as such every Agriculturist in the vicinity should be a member. He said that fire is a great destroyer of plantfood and its use in clearing forests must be avoided as much as possible. He described how large tracts of virgin forests are cleared in Central America without the aid of fire. The President very fittingly conveyed a vote of thanks to the Instructor, who promised to lecture on Corn at the next meeting. The President informed the meeting that the Brompton Water Supply Scheme would soon be put through. After the singing of the National Anthem, the meeting adjourned.

Fyffe's Pen P.O. L. H. E. REID, Secretary.

Mocho Newmarket.—The meeting was called to order by the President. 7 members present. After the reading and confirmation of the Minutes matters arising therefrom were dealt with. (a) The Boar—letter received from Parent Body that 24/- was paid towards its purchase, and 24/- from Parent Body. (b) The Road—Reports received from Half Yearly Meeting that resolutions would be dealt with at Black River by Executives at the Committee Meeting June 19. The Secretary gave a satisfactory report of the Half Yearly Meeting. There was a short discussion re the Tanks Roll Call was next dealt with, after which the meeting adjourned with the National Anthem.

Newmarket P.O. J. E. MONTEITH, Secretary.

ST. JAMES : Salt Spring.—Meeting held 2nd June. Mr. G. W. Anglin presided. There were ten members and a few visitors. The minutes of the previous meeting were read and confirmed, membership fees collected, and Mr. Edward Rose was voted to the Chair to preside over the election of officers. The results were as follows : President, Mr. G. W. Anglin, re-elected; 1st V.-P., Mr. Chas. Richards, re-elected; 2nd V.P., Mr. William Dunstan; 3rd Vice-President, Mr. Edward Rose; Treasurer, Mr. Philip Clarke, re-elected: Secretary, Mr. Llewe. E. Dillon, re-elected. A.P. Mr. J. Glenn, reported one arrest. Mr. Chas. Richards was appointed to collect fares for the proposed trip to Grove Place in July. Agenda for next meeting was arranged, and the National Anthem terminated the meeting.

Montego Bay. LLEWE. E. DILLION, Secretary.

Adelphi.—Meeting held June 8. Present were : Messrs. A. E. Henry, 2nd V.-P., H. A. Young, 3rd V.-P., A. Samuels, V. Anderson, Cleveland Spence, J. D. Morris, R. McBean and A. B. McKenzie. Mr. Henry called the meeting to order and offered prayer. The minutes of the last meeting were read and confirmed. As arising out of the minutes, the Minute Book and the Cash Book that Mr. Henry was deputed to buy, costing 4/- and 2/- respectively, were shown to the assembly and met with the approbation of all. The Secretary reported that he had written the Secretary, J.A.S., as instructed, about Books of Rules for all members, and that he had received three Books of Rules which members who desired to read could borrow and return so that other members could get them. The Secretary was asked to write Instructor Marr asking him for more potato slips as those he had brought on the 13th April had died. Ways of increasing the membership of the Branch and the attendance at meetings were discussed. A list of members who did not attend meetings and of persons likely to become members, was prepared and the Secretary instructed to communicate with them and make every effort to get them to attend the next meeting on July 13. It was decided to put on the Agenda for the next meeting the discussion of the Sugar Cane Industry, since the limiting of the sugar output of the Island in 1938 will seriously

affect this district as this industry is the sole dependence of the peasants. The singing of the National Anthem closed the meeting.

Adelphi P.O. ALVIN B. McKENZIE,
Secretary.

Bickersteth.—Meeting held 1st July. There were present—Instructor Marr, the President and fourteen members. After the reading and confirmation of Minutes the Instructor gave a useful talk on the control of Insect pests and fungi on vegetables. This was much appreciated by members. The President and Secretary informed the members what headway had been made re the arrangements for a trip to Grove Place. It was decided to make this visit on July 9. The Report of the Authorised Person was read and accepted. The meting terminated with "the King."

Montpelier P.O. H. B. M. CRAWFORD,
Secretary.

Orange.—Annual Meeting held May 27. The Instructor, Mr. W. D. Marr, was present, 21 members and many visitors. The Instructor was asked to preside over the election of officers. The result was as follows: Mr. L. H. Pillmer, President; Mr. J. W. Anglin, 1st V.-P.; Mr. B. Bowen, 2nd V.-P.; Secretary and Treasurer, re-elected; Mr. R. Holt, Asst. Secretary, re-elected. The Business Committee was re-elected. This being done the Instructor resumed his seat, and the new President took over the reins of the meeting. He prefaced his remarks with an appreciation of the honour conferred on him, and pledged to do what he could for the Society. He expressed the hope that the members would support him loyally. The Secretary gave his Annual Report, which covered the activities of the Branch for the past year, followed by the Treasurer's report. Correspondence: communication concerning the ram was dealt with. A reply to the petition re asphalting road was dealt with, also that of Land Settlement. Communication re Half-Yearly Meeting, to be held in Kingston in July, was read. Owing to the resignation of a member of the Board of Management, the Branch is entitled to nominate a member for the vacancy. It was decided that the Hon. Member be approached to obtain his permission, so that the Branch would be able to nominate him for the vacancy. The President also offered his services to represent the Society as a delegate. He was thanked. It was moved and seconded that Mrs. Campbell and Mrs. Malcolm be added to the Entertainment Committee. The two Authorized Persons gave their reports—one reported "All Correct," and the other reported a case. Other matters of minor importance were dealt with and the meeting terminated with the singing of the National Anthem.

Adelphi P.O. E. S. ANGLIN,
Secretary.

ST. MARY: Mt. Regale.—Meeting held 4th June. Present: Mr. G. A. Hylton, President, Instructor D. A. Jones, Mrs. A. A. Hylton, Treasurer, 12 other members and the Secretary. The chief matters dealt with were: (a) Delegate to the Half-Yearly General Meeting on the 22nd July; (b) Delegate and refreshment fee for the Half-Yearly Conference at Highgate on the 26th June; (c) the use of fertilizers to the lands; (d) application for Giant Plantain suckers from Hope Gardens; (e) improvement of water supply for the district. Many minor matters were discussed. The meeting was terminated by singing the National Anthem.

Mt. Regale P.O. T. H. HANNAM,
Secretary.

Baxter's Mtn.—Meeting held 15th June. The Secretary opened the meeting. President S. W. Strachan spoke of the Coronation and urged that prayers be made for our King and family and God's protection of the Empire. He spoke of the demise of the late A. S. Campbell, Esq., J.P., and asked that the members stand with bowed heads for a minute as a mark of sympathy. It was decided that letters of congratulations should be sent the Custos re the honour conferred on him, also Mr. H. J. Edwards on his appointment as a J.P. The minutes of the meeting of 16th March were then read and adopted. The Secretary was asked to represent the Branch at the Half-Yearly General Meeting in July. Authorized Persons reported no arrests and displayed equipment which was found in order. Subscriptions were paid. The Instructor was in the district during the day. He visited holdings giving demonstration on trenching of bananas and on budding grape fruits. After having visited the school garden, the Instructor gave a most interesting address on the growth of pine-apples and tobacco, for which he was accorded a hearty vote of thanks. After discussing a few minor matters, the roll call was taken showing 8 members, the Instructor, 5 visitors and the Secretary present. The meeting rose at the singing of the National Anthem.

Annotto Bay. R. J. LAWSON RICKETTS,
Secretary.

Retreat.—Meeting held 17th June. Mr. H. S. Harris, 1st V.-P., presided. Visitors present were, Messrs. C. L. A. Stuart, M.P.B., and W. S. Robinson, President and V.-P., respectively of the St. Mary Branches Associated; 18 members and the

Secretary were also present. As arising out of the minutes, dissatisfaction was expressed at the delay of the water supply for the district. A letter was read from the Secretary of the Parent Society re resignation of Major Moxsy from the Board, and arrangements for the H.Y. Meeting in July. The meeting expressed its profound regret for the resignation of the Major, as it was felt that he had been a very useful member. Mr. C. L. A. Stuart, M.P.B., planter, was nominated to fill the vacancy. Addresses were given by Messrs. Stuart and Robinson, dealing with the work and usefulness of the Agricultural Society and the development of Minor Crops. A powerful plea was also made for increased membership. Instructor Coke dealt with the cultivation of the Pineapple. During the course of the day he had visited holdings of members. Membership: Mr. and Mrs. T. M. Dixon, Mr. Felix Reid and Mr. D. P. Reid, became members of the Branch. As a result of the appeal for membership made by Messrs. Stuart and Robinson, Messrs. T. M. Dixon and A. C. Marsh, planters, paid in their fees as Direct Members of the Parent Society. Delegates were appointed to the H.Y. Meeting of the St. Mary Branches Associated. Mr. A. M. Gayle was appointed to represent the Branch at the Half-Yearly Meeting in Kingston. A resolution re appointment of an Agricultural Headman for this area was moved and carried.

Retreat P.O. A. MUSGRAVE GAYLE,
Secretary.

Epsom.—Meeting held June 2.—Present: Mr. A. C. Gibson, President, Instructor Jones and 13 members. Minutes of the last meeting read and confirmed. As matters arising out of the minutes, there was a strong discussion on Land Settlement. Correspondence was dealt with. Two A.Ps. present reported "All Correct." Correspondence was received re the Half-Yearly Meeting to be held at Highgate. The Instructor stressed the necessity for the Branch to be well represented. Delegates were elected. Addresses were given by a few members and the Instructor, who gave a long and interesting lecture. The meeting came to its close with the singing of the National Anthem.

Annotto Bay. FRED. A EDWARDS,
Secretary.

Clonmel.—Meeting held 12th July. Present: Mr. U. L. Bailey, President; Instructor D. A. Jones, Rev. S. J. Williamson, B.A., 1st V.P., eight other members and nine visitors. Prominent among matters dealt with was the correspondence re "Co-ordination of our several Agricultural Services." The Authorised Persons asked for Books of Rules to show them what their duties were, as claims they had sent in were not considered. The 1st Vice-President moved that an expression of sympathy be sent to Mr. Thos. Ferryman, a member, on the death of his wife. The meeting terminated with "The King."

H. S. MANAHAN,
Clonmel P.O. Asst. Secretary.

Hampstead.—Meeting held July 15. In the absence of the President, who prior to the start of the meeting explained his inability to remain, Mr. T. D. Willis, 1st V.P., called the meeting to order. The minutes were read and confirmed and matters there from taken. The Secretary reported that re Juvenile Branch, it did not seem possible to get a plot within easy reach of the school. Mr. Willis gave a brief report of the St. Mary Branches Associated meeting held at Highgate on 26th June. Mr. L. A. M. B. Coke, Agricultural Instructor, who had spent all day in the district demonstrating budding, etc., spoke to the meeting on the budding and sale of limes, laying special emphasis on seedless variety, buds of which he had been putting on during the day. He also encouraged corn growing and recommended the "Yellow Dent." Correspondence: Letter from (a) General Secretary re A.P. Wm. Osborne; (b) Secy. Manchester Branches Associated. A.Ps. Report: Mr. Jones—1 arrest; Mr. Lewis—1 arrest with conviction. The Banana Resuscitation Scheme was next discussed. Further

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discussions were however deferred till the meeting in September, when it is hoped that planters and others will attend. Other matters of minor importance were dealt with. Those present were: Messrs. T. D. Willis, 1st V.P. (presiding); T. M. Bennett, 2nd V.P., C. E. Nicholson, Secy., G. W. Stewart, Asst. Secy., Instructor Coke and many others.

C. E. NICHOLSON,
Hampstead P.O. Secretary.

Lucky Hill-Jeffrey Town.—Meeting held 20.7.37. Present: Mr. W. A. Smith, 3rd V.P., in the chair; thirteen other members, a few visitors and the Secretary. The minutes of the previous meeting were read and confirmed and business arising therefrom discussed. Mr. Burke gave the report of the Half-Yearly Conference held at Highgate. The Secretary spoke on the address given by Mr. Johnson at last meeting on peas and beans, and asked that it be put in actual practice. It was decided that the Society be asked for the best variety of peas and corn. Two A.Ps. present reported on their work. The Secretary suggested that the Inspector General should be approached to get a Detective stationed at Gayle seeing that the area is large and crimes are on the increase, also that Government be approached to establish a Central Sugar Factory. The Chairman brought up the matter of the road leading from Salisbury to Halifax. After discussing the matter a Committee was appointed to go into it. The meeting closed with "the King."

F. WRIGHT GEOHAGHAN,
Lucky Hill P.O. Secretary.

Richmond.—Meeting held 23rd July. Present: Mr. Julius McIntosh, President; Mr. S. A. Officer, Secretary, 10 other members and one visitor who afterwards became a member. The minutes of the last meeting were read and confirmed. Arising out of the minutes was the question of obtaining a bred ram goat. A.P. Alex. Davidson reported. A.P. Abraham Edwards reported a case. A.Ps. James Hyatt and Richard Mighty reported O.K. in their districts. Messrs. J. McIntosh and S. A. Officer, delegates of the Branch to the Half-Yearly Conference of the S.M.B.A. held at Highgate 26th June, gave their reports to the meeting. Great applause was given by the audience for the closing remarks of the President and the Secretary. Singing of the National Anthem closed the meeting.

S. A. OFFICER,
Richmond P.O. Secretary.

ST. THOMAS: Golden Grove.—Meeting held July 21. The President offered prayer. The minutes of the last meeting were read and confirmed. Matters arising out of the minutes: The name of the Society was agreed to. It was decided to call this Branch The Golden Grove Branch Agricultural Society. A Committee to draw up Rules and Bye Laws for the Society will meet for this purpose. Election of new members. There were three new members. Correspondence: The Secretary then read (a) a letter re Half-Yearly General meeting, (b) a letter re Cedar Grove and Mount Mansfield Land Settlement. Country Fires Law discussed. Hampton Court water supply was discussed. Representations to be made. Authorized Persons were appointed. The Chairman gave some interesting remarks on the upkeep of the Branch and asked the members to be punctual in coming to the metings. The meeting came to a close by singing a verse of the National Anthem.

DAVID DIXON,
Golden Grove P.O. Secretary.

Hagley Gap.—Monthly meeting held 28th May. Mr. J. N. Gordon presided and the following officers were present: Messrs. N. B. Clarke, 1st V.P., H. B. Gilroy, 2nd V.P., J. M. N. Grant, Secretary; Miss B. E. Singleton, Treasurer, and 10 members. Several matters were discussed and delegates appointed for the meeting of the St. Thomas Branches Associated to be held at Morant Bay.

J. M. N. GRANT,
Hagley Gap P.O. Secretary.

TRELAWNY: Hasting's Juvenile.—Meeting held 16th June. Present: Enos Wright in the chair, the Teacher, the Minister and 34 other members. The meeting was opened with prayer, after which the President in a few words welcomed those present. Next was the reading and confirmation of the minutes. Matters arising out of the minutes:—Seeds.—This was talked about and it was decided to send for them as soon as possible. Five boys were appointed to feed the rabbits, and three girls and two boys were appointed to cut and sell corn. The cutting must be done on Friday morning, so that corn can be sold on Friday afternoon. The Treasurer gave her report. She had collected 1/10 fees. Those in arrears were urged to pay their fees. Authorised Persons reported. Teacher gave his remarks and asked the Minister to address the meeting. The children of Standard IV gave a recitation. The Minister gave an interesting address on agriculture, saying it is the best thing by which we can gain our living, therefore it should not be despised.

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A vote of thanks was moved and seconded for the Minister. It was decided that a letter should be written to the Instructor asking him for some egg plant and orange buds. A letter was written to Teacher Cousins thanking him for rabbits. The Minister, Rev. Knight, became an Honorary member and promised a fee of 6d. The meeting came to its close after the singing of the National Anthem.

W. ECCLESTON,
Secretary.

Deeside P.O.

Spring Garden-Rock Spring.—Meeting held 10.6.37. Present 8 members, the Instructor and some visitors. President welcomed all present and then asked the Secretary to read the minutes of the last meeting. It was moved and seconded that they be confirmed. Matters arising out of the minutes were dealt with, also correspondence. The opinion of the Instructor re the use of artificial manures was asked, and he advised the use of the local bat manure which is got very easily around these parts, and it has been proven very successful by many in and around the district. The Instructor was thanked for these remarks. There was a letter from the Secretary of the Trelawny Branches Associated naming the date and the place of the Half-Yearly meeting. The Branch promised to send three delegates. The A.P. reported "All correct." The Instructor very kindly offered to distribute to members of the Branch some corn for planting in the next planting season. He also promised to do some budding. The President thanked those who came to the meeting, which terminated with the singing of the National Anthem.

(Miss) L. M. EDWARDS,
Secretary.

Albert Town P.O.

Troy.—Meeting held 23.6.37. Present: Mr. W. A. McDonald, in the chair; Instructor Thompson, Mr. L. A. Parker, Secretary, seventeen regular members and forty-three others. Arising from the minutes the following were dealt with—(a) The cultivation of Red Peas (b) The need for more arable lands for the peasantry. (c) The opening of roads into the Crown Lands and (d) The prohibition of setting fire to land. The Secretary was asked to invite the M.L.C. for the parish into the district to lay before him the people's need—special reference to land room and roads. The importance of using fertilizers to obtain better results was stressed. The members promised to pool their subscriptions in order to get supplies for their holdings. The meeting rose after the singing of the King.

L. A. PARKER,
Secretary.

Troy P.O.

Wilson's Run.—Annual meeting held April 18. Minutes of last meeting adopted. Secretary's and Treasurer's reports adopted. President's address was based on the usefulness of the Society and hopes for its renewed strength and activity. The importance of the Society in such a remote area was greatly emphasized by the speaker who by reference to several instances pointed out the power of an appeal made to authorities through Branches of the J.A.S. Suggestions were made of means by which interest may be stimulated in the working of the Branch, and vegetable growing for local marketing and home use very much emphasized. Election of officers resulted as follows: Pres., Mr. W. A. Motta; 1st V.-P., Mr. J. Pinnock; 2nd V.-P., Mr. G. Coke; 3rd V.P., Mr. Murray; Secy., Miss I. L. Rogers; Asst. Secty., Mr. L. Cowan; Treasurer, Mrs. Motta. Committee—Officers, Mrs. Black, Mrs. M. Stevens, Mr.

Bryan and Mr. R. Pinnock. Seven visitors present, of whom two enlisted as members. National Anthem.

(Miss) I. L. Rogers,
Troy P.O. Secretary.

Duncans.—Meeting held 20th July. Present: L. N. Grant, Esq., President; Hon. and Rev. J. W. Maxwell, Miss A. T. Goodall (Secy.), and many members. The meeting was called to order by the President and a hearty wecome extended to those present. The Secretary read the minutes of the last meeting. After the confirmation, matters arising therefrom were dealt with. Among the correspondence taken was an outline of the Scheme for the co-ordination of the Agricultural Services in Jamaica. It received the favourable consideration of the members present. A few items on Agriculture affecting the members were dealt with; among them was the urgent necessity for a bridle track into the mountain lands of Upper Trelawny, owned by peasant proprietors. The members concerned were advised to petition the Board through the Society. The agenda for the next meeting was fixed and the meeting closed with the singing of the National Anthem.

(Miss) A. T. Goodall,
Duncans P.O. Secretary.

WESTMORELAND: Petersfield.—Meeting held 7th July. Present: Mr. J. T. Turner, in the chair; Instructor F. W. Kelly, 15 members and several visitors. The President opened the meeting and expresed his pleasure in seeing so many members present. It was decided that at the next meeting there should be a debate. The Instructor stated in his address that he was glad to see a full house. This Society was organised by Sir Henry Blake in the year 1897. He realised that there was a great difference with the small planters here to the small planters outside. He wanted to promote Agriculture, Horticulture, Arboriculture, Apiculture, and stock raising in all its branches. Big planters are making use of this Society. A vote of thanks was accorded the Instructor. Two members were enrolled. Several matters were dealt with and the National Anthem terminated the meeting.

J. T. McBean,
Petersfield P.O. Secretary.

Porter's Mtn.—Meeting held July 19. Present were Mr. C. W. Parkins, 1st V.P., who occupied the chair; 6 Juveniles, many members, a few visitors and the Secretary, Mr. D. F. Bowen. The President and Asst. Secretary were absent through illness. In calling the meeting to order the Chairman offered prayer after which he extended the courtesy of the floor to all. After the reading and confirmation of the minutes the following matters which arose therefrom were discussed:—(a) Fertilizers. The Secretary explained that he had made enquiries, but no reply had yet been received. (b) Letters sent to M.P.Bs. of Hanover (c) Vaccination of children. The Secretary had made representation to the S.M.O. through the Rev. Wilson asking that the D.M.O. be allowed to come to the schoolroom instead of to Williamsfield as at present. No reply yet received. (d) Social in August. The Secretary reported that the "Ways and Means" Committee had not met as they had agreed to do, and so there was nothing definite to put to the meeting. After discussion it was agreed to hold the Social in September. The three A.Ps. present reported "all correct." A letter from Instructor Hastings stating his inability to attend the meeting was read, also the letters from the members of the Parochial Board. A circular letter re the co-ordination of the various Agricultural Services was read. The most important part of the agenda was a debate, "The Goat is more payable to rear than the Pig" was now taken. After many strong points were put forth on both sides, votes by show of hands were taken which resulted as follows: Positive 16, Negative 6. The positive side was declared victorous. After new members were enrolled, fees paid, and agenda for next meeting made, the meeting was brought to a close by the singing of the National Anthem.

D. F. Bowen,
Ramble P.O. Secretary.

Haddo.—Meeting held July 5. Present: J. A. Stewart (Pres.), 25 members and 35 visitors, also Instructor Kelly. The chief features of this meeting were (a) acquisition of a ram for the Society; (b) Debate: "Be it resolved that the banana cultivation of Westmoreland is more profitable than cane cultivation." Ram: Instructor Kelly said he had advised the Secretary of the J.A.S. to close the bargain for an Anglo-Nubian, half bred. Debate: The affirmative was argued by Rev. C. A. Wilson with Teacher D. Henry seconding. The negative was argued by Mr. O. Black, with Mr. E. R. Peart supporting. After a very heated discussion the voting resulted in a victory for the negative. Instructor Kelly and Dr. Arthurs complimented the speakers on the points brought out, and encouraged the members to give banana cultivation a fair trial although the soil was so much suited for cane. The meeting decided to

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throw its lot in with the monster meeting to be held at Mt. Ward on August 5 re economic conditions of the surrounding districts. The Officers of the Branch were apponted officers of the Committee for arrangements. Minor matters were dealt with, and a very enthusiastic meeting closed with the singing of the National Anthem.

O. A. BLACK,
Asst. Secretary.

Ramble P.O.

Porter's Mountain (Juvenile).—Meeting held June 25th. Miss B. Reid presided. Calling the meeting to order, she extended a welcome to all present and called on the Secretary to read the minutes of the last meeting. These were read and confirmed. Mr. Roland Miller, a member of the Parent Society, addressed the meeting. This was followed by a song by Miss D. Forbes and a recitation by Miss Sylvia Stewart. Votes of thanks were tendered to these parties mentioned. Impromptu speeches which formed the special item on the agenda were now taken. This was a very successful item and as a result it was decided to continue this item at the next meeting. The President now announced the illness of Miss V. Sinclair, the Secretary of the Society and suggested that the members show their regret by sending a present for her. It was decided that a bouquet and a chicken were to be sent her at an early date. The meeting terminated with the singing of the National Anthem.

L. D. BARRACKS,
Reporting Secretary.

Ramble P.O.

OTHER REPORTS RECEIVED.

Branch and Secretary.	Date of Meeting.	Attendance.	Business.
Clarendon—			
John Austin (H. S. Halstead)	28 6 37	12	Sugar Industry. Road. Address by Instructor.
Sunbury (NarreldKnight)	13 7 57	over 20	Citrus Demonstration Plot. Road.
Manchester—			
Bellefield (Miss M. J. Morgan)		over 13	Report of delegates to M.B.A. Handling of citrus fruits. Address by Instructor Darby.
Ebenezer (Roy Thompson)	24 6 37		Report of delegates to M.B.A. Authorized Persons. Show. Vegetables for export.
Mile Gully (T. A. Morris)	25 6 37		Country Fires Law. Addresses by Mr. Lecky, Stock Inspector, and Instructor Darby.
Mizpah (U. C. Wolfe)	12 7 37	28	Rum. Lecture by Mr. Lecky, Inspector of Stock.
New Green (H. E. Gayle)	1 7 37	14	Demonstration of budding. Fertilizers. Address by Instructor Darby.

OTHER REPORTS RECEIVED, *contd.*

Branch and Secretary.	Date of Meeting.	Attendance.	Business.
Old England (C. P. Watson)	29 6 37		Fertilizers. Correspondence. Coffee Industry.
Portland—			
Portland Central (A. F. Spence)	17 7.37	over 14	Red Peas Industry. Water supply Vaccination centre. Fish trade. Address by Instructor Graham. Agricultural Headman.
Balcarres (Mrs. A. V. Nesbitt)	28 4 37	17	Protection of water supply. Election of officers. Address by President.
Maidstone-Bourbon (I. E. Somers)	14 7 37	9	Road. Nomination of A.Ps.
Bybrook (J. V. Watson)	8 7 37	9	A. Ps. Report of delegate to P. B. A. Minor matters.
Mahoe (J. O. Grant.)	15 7 37	over 15	Correspondence. Minor matters.
St. Andrew—			
Westphalia (A. Campbell)	3.7 37	11	Country Fires Law. Election of delegate to half-yearly meeting.
Rock Hall (Mrs. B. Heslop)	19 7 37	18	School. Correspondence. Unemployment Country Fires Law.
St. Catherine—			
Springfield (S. C. Matthews)	13 7 37	14	Address by Instructor Coke. Report of A. P.s.
Princessfield (P. G. C. Graham)	26 7 37		Water supply. Election of officers. Report of A. Ps. Correspondence. Address by Instructor Byles.
St. James—			
Salt Spring (L. E. Dillion)	14 7 37	15	Trip to Grove Place. Resignation of Secretary.
St.James—			
Orange (E. S. Anglin)	24.6.37	over 17	Post Office. Land Settlement. Debate. Report of A. P. Social.
St. Mary—			
Richmond (S. A. Officer)	25 6.37	11	Pineapple industry. A. P.
Long Road (R. M. Hird)	19 7 37	22	Report of delegates to S.M.B.A. Visit to Grove Place.
Baxter's Mtn. (R. J. Lawson Ricketts)	28 7 37	.	Report of A.Ps. Bridge. Shed for animals.
Epsom (Fred. A. Edwards)	7.7 37	20	Water supply. Report of A.P. Lecture by Instructor Jones. Address by President.
Hagley Gap (M. N. Grant)	25 6.37	..	Tank. Report of delegates to St. Thomas Br. Assoc.
Ditto	24 7.37	..	Road. Tank. Minor matters.
Trelawny—			
Waldensia (C. A. Cotterell)	5.7 37	..	Land Settlement. Address by Instructor Robotham
Westmoreland—			
Haddo (O. A. Black)	7 6.37	Over 17	Report of delegate to W.B.A. Ram. Sugar Quota. Lecture on cultivation of pineapples, by Instructor Kelly.
Caledonia (I. Vic. McPherson)	22 6 37	..	Correspondence. Election of officers. Lecture by Mr. Heron. Bee Instructor.

OTHER REPORTS RECEIVED, *contd.*

Branch and Secretary.	Date of Meeting.	Attendance.	Business.
Manchester—			
Bellefield (Miss M. J. Morgan)	4.6 37	20	Election of delegate to Half-yearly General Meeting. Badges of Authorized Persons. Correspondence.
Portland—			
Mahoe .. (J. O. Grant)	17.6 37	Over 20	Correspondence. Report of delegates to meeting of Portland Branches Assoc. Appointment of delegates to Half-yearly Meeting.
Craigmill . (Rev. T. Lawrence)	1.6 37	Over 15	Correspondence. Election of Delegate to Half-yearly Meeting.
St. Catherine—			
Princessfield (P. G. C. Graham)	31 5 37	..	Road and water supply. Minor matters.
Do. ..	28 6 37	.	Water supply. Report of A. P. Minor matters. Address by A. P.
Bowerswood (P. E. J. Davis)	10.6.37	21	Address by Chairman. Appointment of delegates to Half-yearly General Meeting. Report of A. Ps. Report of visit of M.P.B. and Asst. Supt. of Parochial Roads.
St. Elisabeth—			
Malvern . (Miss E. I. Blake)	28.5.37	21	Correspondence. Vegetable Competition. Election of delegate to Half-yearly Meeting. Corn Competition. Address by Instructor Lynch.
Pepper (Mrs. M. A. Atkinson)	16.6.37		Country Fires Law. Address by Instructor. Appointment of delegate to Half-yearly Meeting.
St. Mary—			
Long Road (R. M. Hird)	21 6 37	16	Country Fires Law. Lecture by Instructor. Report of A. P.
Marlborough (S. L. S. Sterling)	8.6 37		Reports of Secretary, Treasurer and A. Ps. Election of officers. Routine matters.
Trelawny—			
Waldensia (C. A. Cotterell)	7 6 37	Over 18	Land Settlement. Report of A.P. Minor matters.
Wilson's Run . (Miss I. L. Rogers)	11 5 37		Growing of vegetables. Address by Instructor.
Hastings' Juvenile (Winston Eccleston)	4 5 37	39	Address by Instructor. Demonstrations in the school garden.
Westmoreland—			
Cairn Curran .. (Miss P. A. Hemmings)	11 6.37	21	Road. Water supply. Address by Instructor Kelly.
Sheffield .. (S. M. Hall)	16.6.37	Over 10	Address by President. Spray for use of the Branch. Letter from Instructor in Beekeeping.
Strawberry .. (H. Wesley Reynolds)	8.6.37	25	Road. Correspondence.

Jamaica Agricultural Society.

LIST OF CURRENT PRICES—JULY, 1937.

All orders must be fully prepaid, *as we do not carry accounts.*

SEEDS.	Bushel	Quart	Packet
GREEN DRESSINGS			
Overlook Beans	12/-	5d.	..
Jerusalem Peas ..	24/-	10d.	..
SEEDS:			
Seed Corn	12/-	5d.	..
Red Peas ..	22/-	9d.	..
Cow Peas .	12/-	5d	..
Black Eye Peas ..	18/-	9d	
No Eye Peas .	16/-	7d.	..
	100lbs.	1 lb	.
GRASS SEEDS			
Guinea Grass ..	50/	6d.	.
Wynne Grass ..	..	1/3	..
	Packet	12 Pkts.	Oz.
VEGETABLE SEEDS:			
All varieties ..	3d.	2/6	..
TOBACCO SEEDS:			
Virginia (imported)	3d.	2/6	4/-
Havana " ..	3d.	2/6	4/-
Virginia (native) .	3d.	2/6	2/6
	Brl. at Office.	Brl. Shipped.	5 lbs
SEED POTATOES..	24/-	26/-	1/-

FEEDS.	100 lbs	1 lb.	Bag.
Coconut Meal	6/-	1d.	
Dairy Feed .	8/-	1d.	
Calf Meal	.	3d.	20/-
Mixed Poultry Grain	11/6	1½d	
Laying Mash .	18/-	2½d.	5 lbs-1/
Growing Mash .	17/6	2½d.	"
Baby Chick Feed ..	20/-	3d.	
Chick Grain ..	17/6	2½d.	"
Meat Meal .	20/-	3d.	
Bone Meal	18/-	2½d.	
Butter Milk .	25/-	3½d.	
Fish Meal ..	24/-	3½d.	

STOCK MEDICINES·	Pckt. or Bottle	Oz.	Each.
Poultry Tonic (TAVARES)	6d.	..	
Liniment ..	6d.		
Healing Oil	6d.	..	
Healing Salve .	1/-	..	
Healing Powder	1/-	..	
J.A.S. Poultry Lice Powder ..	.	3d.	
Cattle Condition Powder .	1/-	..	
Kamala Nicotine Caps ..	2/-	.	½d
Nema Worm Capsules	..	.	4d.· & 6d.
Chicklivia ..	5/-	..	6d. for 10
Thymol Powder ..	6d.	..	
Karswood poultry Spice ..	1/6 per lb.		

STOCK MEDICINES, *contd.*	Pckt. or Bottle.	Oz.	Each.
Poultry Leg bands	7/6 in 100 lots		1d.
Spiralets ..	4/- per 100		½d.
FERTILIZERS:	100 lbs.	1 lb.	
Calcium Cyanamid	10/-	1½d.	
Sulphate of Ammonia	10/	1½d.	
Sulphate of Potash	12/6	2d.	
Ammophos ..	12/6	2d.	
Nicifos—2 ..	12/6	2d.	
Muriate of Potash	16/-	2d.	
Nitrate of Soda ..	10/	1½d.	
Superphosphate ..	6/-	1d.	
Adco. ..	20/-	3d.	
MIXTURES:			
4.10.12. .	10/-	1½d.	
12 8.3. ..	10/-	1½d.	
10 10.12. ..	10/-	1½d.	
7.10.12 ..	10/-	1½d.	
N.B. Prices are subject to change without Notice.			

INSECTICIDES & FUNGICIDES:	Quart	lb.	Packg.
Paranaph .	..	4d.	..
Bluestone ..	..	6d.	..
*Nicotine Sulphate 40% ..	..	7/6	
*Emulso ..	1/3	5/- gal.	
Whale oil soap .	..	7d.	
Sulphur Lime .	..	6d.	
Rat Poison ..		3/6	
Bordinette	.	1/3	
Rock Ammonia ..	..	2/-	
Paris Green ..	..	1/6	
Arsenate of Lead ..		1/-	
Para-dichloro benzene	.	1/6	
Cyanogas ..		2/9 tin	
Ant Killer ..		2/- tin	
Ostico		2/6 tin	
Cut worm Killer	..	1/6	
Pyrethrum mixture	1/6	..	
Folio fume ..	..	6d.	oz.
Soilex for testing soil	..	..	

*Customers provide containers.

MACHINERY:	Each.
Estrella Coffee Pulper	£10 0 0
Mtoto Coffee Pulper	£3 17 6
"Solo" Spray (Complete)	£1 5 0
Fly Trap (House)	4 6
Fly Trap (Fruit)	4 0

LITERATURE:
"Goats," "The Coconut," "Coffee," "Grape Vine Culture," "Tobacco Cultivation," etc. — 3d. per copy.

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THE JOURNAL

OF THE

Jamaica Agricultural Society.

The more people do the more they can do; he who does nothing renders himself incapable of doing anything; while we are executing one work we are preparing ourselves for undertaking another.

Vol. XLI. **SEPTEMBER, 1937.** **No. 9.**

BOARD OF MANAGEMENT.

The regular monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the Office of the Society, 10-12 North Parade, Kingston, on Wednesday, the 4th August, 1937, at 11.30 a.m. There were present: Hon. G. Seymour Seymour, O.B.E., in the chair, Rev. W. J. Thompson and Mr. U. Theo. McKay, Vice-Presidents; Mr. F. E. V. Smith, Acting Director of Agriculture, (ex officio), Hon. C. A. Reid, Messrs. C. O. Cover, T. P. V. McDaniel, D. D. Phillips, C. L. A. Stuart, S. M. Walker and W. Harper Watson, Mr. A P. Hanson, Supervisor of Instructors and D. G. Macdonald, Accountant, who acted in the absence of the Secretary. Shortly after the meeting began the Hon. F. L. Brown, Acting Colonial Secretary and Mr. Sidney Barton attended.

Mr. C. L. A. Stuart, recently elected to the membership of the Board, was extended a welcome, for which he thanked the Board.

Miss Lewis, a member of the Office Staff who had been on furlough abroad, was also welcomed.

Apologies for Absence.

Apology for absence was tendered on behalf of Mr. T. J. Cawley

Confirmation of Minutes of Previous Meeting.

Copies of the Minutes of the previous meeting having been sent to the members of the Board, they were taken as read, and confirmed.

The Chairman stated that the Acting Secretary, Mr. Bacquie, was ill and that the Accountant, Mr. Macdonald, was carrying on the work.

Matters arising out of the previous Meeting.

(a) *Secretary's Statement* that all correspondence consequent on the deliberations of the Board at their last meeting had been carried out was noted.

(b) *All-Island Exhibition.* A statement by the Acting Secretary was read advising that carrying out the directions of the Board, circulars had been issued to Members of the Legislative Council, Custodes and other prominent gentlemen, several of whom had replied, but all activities in this connection had been suspended in consequence of the resolution passed at the Half-Yearly meeting.

The Chairman stated that immediately after the Half-Yearly meeting he had written to His Excellency as follows:—

26th July, 1937.

"Sir,

The memorandum setting out the proposals for the All Island Exhibition was placed before the half-yearly meeting of the Jamaica Agricultural Society on July 22nd.

The delegates from Clarendon, Messrs. Dunkley and Terrier moved and seconded a resolution, respectively, to the effect that, as the Show Committee set up to deal with a proposed All-Island Exhibition on lands to be presented by Hon. G. W. Muirhead, Custos of Clarendon, at Denbigh near May Pen, had carried out its plans with the approval of the Board of Management of the Jamaica Agricultural Society and the Director of Agriculture, and that all that was left to complete same was the grant of One Thousand Pounds to be recommended by the Agricultural Development Board and His Excellency the Governor, that the half-yearly meetings should approve of the All-Island Exhibition being held at May Pen in 1938.

This the meeting agreed to *nem con.*

I find myself in the following position :—

(1) A Committee to deal with an All-Island Exhibition (proposed site Mona) has been set up.

(2) A Financial Committee to deal with No. 1 has been set up with the Treasurer as a member and most likely Chairman.

(3) A meeting of the Committee under No. 1 was called for July 29th, 1937, but under the above circumstances the date has been cancelled pending my hearing from you on the matter.

(4) The concensus of opinion at the half-yearly meeting was that there was not sufficient time to prepare the Mona Grounds and put up the buildings and also to get the exhibits in time for February-March, 1938.

I had seen Mr. Altamont Dolphy, he is willing to give up the 14 acres of land at Mona provided he is made an allowance in the rent under his lease.

There ought not to be any trouble with the Water Commission agreeing to let the land to the Show Committee for a period of years as the land is vested in the Colonial Secretary.

I had had several letters sent to prominent people in the parishes asking them to sit on Local Committees, and I received several replies agreeing. So that we were really getting ready for the spade work to be done when this hitch has occurred regarding the Clarendon All-Island Exhibition.

I would be glad if you would give some indication of what you want done, whether I am to proceed with the proposed All-Island Exhibition wth Mona as a site to be held February-March, 1938, or if you propose re-considering the matter in the light of the claims of the Clarendon All-Island Exhibition Committee.

I am unable to move further in this matter until I know what you desire done as President of the Jamaica Agricultural Society. "

He had in reply received the following:—

28th July, 1937.

"In reply to your letter of 26th July, the Governor says that he mentioned the matter to you yesterday. In view of the fact that it was unanimously agreed at the J.A.S. meeting that the Show should be held at May Pen, he agrees that the views of the Society should be accepted, though he regrets the postponement of the All-Island Exhibition and the change of venue, as he considers that such an exhibition in Kingston would have proved a great attraction and could have been held on a much larger scale.

His Excellency does not consider that any further steps should be taken at present for the requisition or lease of the Mona grounds but will discuss this suggestion with the Acting Director of Agriculture and also the assistance to be given to the May Pen Show.

The reference to a grant of £1,000 to be recommended by the Governor is not understood and he does not consider that any financial assistance on so large a scale can be granted."

The general opinion was that Mona was the more desirable site for the holding of such an Exhibition; some members thought that there was not enough time available for satisfactory preparations to be completed by February or March, 1938.

Mr. Reid said he did not see any reason why both Shows should not be carried through, and suggested that the Mona Show be held in 1939 during the period of the proposed Scouts Jamboree when there would be an influx of visitors in the Island, but the Chairman pointed out that the impasse was due to the fact that only one set of permanent

show fixtures would be erected by Government and there were at present two sites proposed. He was of opinion that the question of limited time would not arise as the necessary funds would be immediately available from Government to expeditiously carry through the necessary preparations. The whole matter hinged on whether the Clarendon Show Committee would be willing to stand aside in favour of the proposal to hold the Show at Mona.

Mr. Cover asked questions as to the financial results of Shows, and was told that the profits were under the jurisdiction of the Show Committee that carried through the Show. He pointed out that His Excellency while willing to finance the Show if it was held at Mona, was apparently not inclined to do the same thing for the Clarendon Show.

The Acting Director of Agriculture stated that since the Half-Yearly meeting he had met several members of the Clarendon Show Committee, and he had also discussed the matter with His Excellency and he was of opinion that some satisfactory arrangement could be made.

Mr. Cover pointed out the responsibility of the Society in regard to its promised co-operation with the Clarendon Scheme, the carrying out of the wishes of the Half-Yearly Meeting and the adverse influence certain action might have on the generosity of citizens who might be inclined to make public donations, such as was done in connection with the May Pen Show Grounds.

The motion that the First Vice-President confer with the Governor and the Acting Director of Agriculture on the whole subject of an All-Island Show and then call a joint meeting of the Clarendon Show Committee and the Show Committee of the Jamaica Agricultural Society and report progress at the next meeting of the Board, was passed.

The Acting Colonial Secretary who attended during the discussion was formally welcomed to the meeting.

It was agreed that certain items listed lower down on the Agenda should be dealt with, and the following were taken:—

Resolutions.

(a) *First Vice-President re Change of Bye-Law* 15. The Chairman said that at the last meeting of the Board he had given notice of motion regarding the deleting of Rule 15 from the Bye-Laws of the Board of Management.

After discussion it was decided "That Bye-Law 15 of the Board of Management be suspended for a period of one year from 4th August, 1937, to give effect to the resolution concerning the new Instructors' Committee passed on the 2nd of June on the motion of Mr. Cawley and Mr. Cover."

Co-ordination of Agricultural Field Services.

(a) *Appointment of new Instructors' Committee.* The Chairman stated that according to recent decisions of the Board of Management and the Half-Yearly meeting it was necessary to appoint the new Instructors' Committee of seven members with the Director of Agriculture as Chairman.

The personnel of the Committee was balloted for and the following were elected:—The Director of Agriculture (Chairman), the three Vice-Presidents, Hon. G. Seymour Seymour, O.B.E., Mr. U. Theo. McKay and Rev. W. J. Thompson; Messrs. C. O. Cover, T. P. V. McDaniel

and T. J. Cawley obtaining 13, 13, 13, 12, 11, 9 and 7 votes respectively.

It was suggested that as far as possible the dates of the meetings of this Committee should coincide with the dates of the Regular meetings of the Board.

(b) *Memorandum from Director of Agriculture re new Instructors' Committee.* Memorandum from Hon. A. C. Barnes covering some notes on the proposed new Committee was directed to be referred to the Committee.

(c) *Appointment of Secretary.* This matter was considered at length. Finally, the following, moved by Mr. McKay and seconded by Mr. Walker was carried, Mr. Cover declining to vote: "That the Government be requested to second Mr. A. F. Thelwell, Superintendent of Grove Place Stud Farm as Secretary of the Jamaica Agricultural Society for a period of not less than two years at a salary of £650 per annum rising by increments of £25 to £750.

The meeting then adjourned for luncheon.

On the resumption there were present: Mr. Seymour, in the Chair; Hon. C. A. Reid, Messrs. McKay, Cover, Phillips and Stewart, Mr. Hanson, Supervisor of Instructors, and the Accountant, Mr. Macdonald. Mr. McDaniel attended shortly after the resumption.

Mr. McKay moved the adjournment of the meeting and said he wished to bring to attention a situation existing in connection with the Banana Industry. He pointed out that the present production of bananas could not apparently be taken care of for export by the Companies operating in the Island and if it were necessary another Company should be welcomed so that the entire supply could be handled to the advantage of the Island. The prices offered for the fruit were not altogether satisfactory. It was very desirable that all the fruit available for export should be lifted.

Mr. Stuart seconded the motion supporting what Mr. McKay had set out.

The motion was, however, withdrawn.

Matters left over from the Previous Meeting.

(a) *Application from Nain Branch to hold local Show 1st January,* 1938 was submitted and the request granted.

(b) *Memorandum from Stony Hill Branch re Peas Industry.* The memorandum was presented. It was pointed out that this matter had been submitted to the Government for consideration, and the memorandum was therefore laid on the table.

(c) *Letter from Mr. J. Barclay, Grenada, re increased foreign subscription.* This letter conveyed Mr. Barclay's disapproval of the increased rates of subscription to the Journal.

The letter was tabled.

(d) *Estimate for Advertising from Leslie Advertising Service.* Sketches of proposed alternative decorative signboards for erection in front of the extended office buildings were submitted. These were, however, not approved and the Chairman was asked to see that a suitable signboard was put up.

Statement of Accounts.

(a) *Statement for June.* The Chairman said the statement for June appeared in the Minutes.

(b) *Statement for July* was submitted as follows:—

STATEMENT OF ACCOUNTS FOR JULY, 1937.

Receipts.	Estimates. £ s. d.	Total. £ s. d.
To Subscriptions	190 0 0	106 8 8
Affiliation and Journal Fees	190 0 0	137 17 11
Advertisements in Journal	300 0 0	20 3 3
Miscellaneous	10 0 0	3 13 5
Bee Industry Sales	5 0 0	
Government Grant	10,000 0 0	3,500 0 0
Government Grant for Bee Industry	350 0 0	
Appropriation of Seeds Department		
Surplus	400 0 0	
	£11,945 0 0	£3,768 3 3
Balance from 31st March, 1937		927 6 5
Shows Account		15 1 9
Seeds Trading Account		1,124 0 8
		£5,834 12 1
Less Expenditure (contra)		5,325 15 10
Balance		£508 16 3
Cash in hand	116 7 9	
Cash at Barclays Bank, Current Account	32 8 9	
" " " Special Account	176 5 10	
Cash at Royal Bank of Canada, Current Account	183 13 11	508 16 3

Expenditure.	Estimates. £ s. d.	Total. £ s. d.
By Personal Emoluments :—		
Secretary and Office Staff	2,005 0 0	843 14 8
Supervisors and Field Staff	8,006 0 0	2,359 4 10
Instructors' Educational Courses	125 0 0	65 0 0
Instructors' Tools and Equipment	100 0 0	13 8 2
Secretary's and Sundry Travelling	100 0 0	34 10 8
Printing and Stationery	100 0 0	47 2 8
Printing and issuing Journals and Reports	850 0 0	119 10 0
Rent and Rates	58 0 0	16 11 0
Telephones	27 0 0	7 11 0
Postages and Telegrams	10 0 0	3 7 11
Maintenance of Office Equipment	15 0 0	2 16 0
Incidentals	50 0 0	22 13 1
Auditor's Fees	25 0 0	
Library Books	10 0 0	
Show Equipment Repairs	15 0 0	4 3 4
Bombay Mango Propagation Plots, Citrus Budwood, Small Stock Subsidies	250 0 0	36 10 3
New Office Equipment	100 0 0	8 13 3
Encouragement to Juvenile Branches	20 0 0	
Fertilizer Demonstrations	100 0 0	0 8 0
Cassava Trial Plots	10 0 0	2 0 0
Beekeeping Industry	350 0 0	195 18 11
	£12,482 0 0	£3,783 3 9
Travelling Advances and Imprests		348 0 0
Shows Account		0 8 6
Gratuities : J. A. Banks, W. Z. Buckley		75 0 0
Seed Trading Account		1,112 16 7
Buildings, Alteration and Extension		6 7 0
		£5,325 15 10

(Sgd.) DONALD MACDONALD,
Accountant.

Mr. Cover brought to the attention of the Board that contrary to the directions of the Board certain individuals had been allowed to carry personal accounts with the Society.

It was agreed that special effort should be made to collect the outstanding accounts, and a list of debtors submitted at the next meeting of the Board, and also that the practice should be discontinued.

Substitution of term Farmer for term Proprietor.

Mr. Cover obtained the suspension of the Standing Orders and moved the following, which was seconded by Mr. McKay and carried:—

"That in the opinion of the Board of Management of the Jamaica Agricultural Society all owners of land engaged in agriculture be hereafter styled or known as farmers large and/or small, and the disuse of the terms Proprietor and Peasant Proprietor be encouraged through the agency of the Parent and Branch Societies."

Leave of Absence.

Hon. R. Ehrenstein's application for four months' leave of absence as from the 27th July, was submitted and the leave granted.

Resolutions.

(b) *Mr. W. S. Robinson (Direct Member) re Agualta Vale for Land Settlement and Training Centre.* This resolution requested that Government be requested to acquire the property "Agualta Vale" for the purposes of Land Settlement and retain 100 acres for a training centre along the lines of education of the Trinidad College of Agriculture.

It was decided that this resolution should be forwarded to Government, pointing out that a modified form of the educational scheme suggested would meet the situation.

(c) *Mr. W. S. Robinson (Direct Member) re Corporal Punishment for Praedial Larceny.* This resolution suggested that in the case of certain crimes corporal punishment along with imprisonment should be inflicted.

The Board did not pass the resolution.

Communications.

(a) *Letter from Acting Director of Agriculture re* (i) *Seconding Mr. Marr to Department of Agriculture, and* (ii) *Seconding Mr. Miller as Instructor for Supervision of Demonstration Holdings.* The Chairman said that he had received a letter from the Acting Director dated 24th July, in which he stated that as a result of their advertisement Mr. Marr had been selected for appointment with his Department in connection with the minor fruits and vegetables work. He suggested that Mr. Marr should be seconded for this service and requested that he be released as early as possible.

The Chairman stated that the Acting Director of Agriculture had also written regarding Mr. Miller as follows:—

With regard to the Agricultural Instructor for the supervision of Demonstration Holdings on Land Settlements, I have to inform you that Government has seconded Mr. H. C. Miller, Junior Agricultural Officer, to this Instructorship with effect from the 1st August and the question of Mr. Miller's duties should therefore be discussed at the first meeting which can be called of the new Instructors' Committee.

Government has instructed that the Director of Agriculture will exercise financial control over the funds voted in connection with this work of establishment of Demonstration Holdings and the provision of a special Agricultural Instructor."

The Chairman said he had written to the Acting Director of Agriculture as follows:—

26th July, 1937.

"In reply to your letter of the 24th inst. in connection with your employing Mr. W. D. Marr as a Field Officer, and suggesting that he be seconded to this position and his salary and travelling then paid by your Department, releasing his salary and travelling from the Jamaica Agricultural Society's subvention which would then be available for the employment of another Instructor:

2. I have seen Mr. Marr, who asks to be allowed to go at the end of July and take up his position under your Department as from 1st August. I approve of his being seconded to the service of your Department and shall place the matter before my Board for confirmation at their meeting on August 4th, 1937.

3. I note that Mr. H. C. Miller has been seconded as Agricultural Instructor for the supervision of demonstration holdings on Land Settlements, with effect from 1st August, and that the question of Mr. Miller's services should be discussed at the first meeting of the Instructors Committee. I would however point out that the Instructors' Committee cannot by the Rules of the Board of Management come into being until their appointment has been confirmed at a subsequent meeting. We can appoint in August, but have to wait until the first Wednesday in September to confirm.

4. I note also that the Director of Agriculture will exercise financial control over the funds voted in connection with the establishment of Demonstration Holdings."

The following letter had also been received by the Acting Secretary from the Government:—

No. 390/37. 29th July, 1937.

"I have the honour to inform you that it is proposed that Mr. W. D. Marr, Agricultural Instructor in the employ of your Society, should be seconded to the post of Field Assistant in connection with the minor fruits and vegetables scheme for a period of three years from the 1st August, 1937, with salary in the scale of £175 per annum rising by annual increments of £20 to £215 per annum, and a commuted travelling allowance at the rate of £12 per month, the appointment to be subject to termination on three months' notice.

2. The Government will be glad to learn whether your Society is agreeable to Mr. Marr being seconded on these terms. If so, Mr. Marr should be instructed to assume duty on the 1st August, 1937.

(Sgd.) F. C. H. WILSON,
for Acting Colonial Secretary.

After discussion it was decided that the attention of Government should be drawn to the resolution passed by the Legislative Council regarding the funds voted in connection with the establishment of Demonstration Holdings, and advised that the Board was therefore not in agreement that the finances should be left entirely under control of the Director of Agriculture, but would ask that the funds be lodged with the Society.

Questions were asked regarding the seconding of an officer for service which elicited that at the end of the period for which the officer was seconded he would be entitled to his original position.

The meeting also held that the new Instructors' Committee appointed that morning had full power to deal with matters under its purview.

Both matters were then directed to be referred to the new Committee.

Messrs. Phillips and Reid left the meeting.

(b) *Letter from C.S.O. re Country Fires Law.* The following was presented and noted:—

No. 1711/28. 19th July, 1937.

"With reference to the correspondence ending with your letter No. 145 of the 16th March, 1937, I am directed to inform you that it is proposed that all the Proclamations issued by Government under Law 17 of 1902, The Country Fires Law 1902,

which are at present in force, should be withdrawn and that a fresh Proclamation covering the whole Island should be issued prohibiting the setting of fire to any crops or bush growing on the land, but permitting the setting of fires to trash (including cut bush and brush wood) provided that the requirements of Section 3 of the Law are strictly observed, and that a fire trace 25 feet wide is cleared around the area to be burnt before any fire is set.

2. I am to ask that the Officers of your Society concerned may be informed accordingly.

(Sgd.) F. C. H. WILSON,
for Acting Colonial Secretary.

(c) *Petition from Instructors re Increments* was directed for reference to the Instructors' Committee.

(d) *Application from Instructor Thompson for loan of £50.* The Chairman was requested to deal with this matter, and agreed to do so.

(e) *Letter from Secretary, O'Meally Branch re Assistance for Authorised Person.* This letter asked for assistance regarding the defence of a case arising from an arrest made by an Authorised Person.

It was decided that the Branch be advised that the Board had no funds from which such a grant could be made.

(f) *Letter of acknowledgment from Mrs. Plant.* Letter was submitted from Mrs. Plant expressing appreciation of the Board's sympathy in connection with the recent demise of Major Plant, a former member of the Board.

(g) *Letter from Supervisor Hanson reporting death of Stud Bull at Llandewey.* The Supervisor submitted in his letter that in Instructor McLaren's report reference was made to the death of the Stud Bull which the Department of Agriculture had stationed at Llandewey.

This was noted with regret.

Matters Referred from Half-Yearly General Meeting.

Resolutions re:

(a) *Banana Industry: Protection of: Wakefield Branch (Trelawny) Deeside Branch.* The following were presented:—

Whereas the Banana Industry is one of the staple industries of the Island, and whereas it provides steady employment and income to the small man especially:

And whereas for the past three weeks the demand for our bananas is very small thus resulting in very great loss which is felt more so by the peasantry:

Be It Resolved that the Parent Society ask Government to give more protection to this Industry that other new markets be explored or provision for more adequate shipping facilities be made.

* * *

Whereas the Banana Industry is the main stay of the Island but more especially of the peasant cultivators in that it affords a weekly income:

And whereas for the past three weeks the demand for this commodity has been somewhat negligible, thus causing not only hardships and suffering amongst the peasant cultivators but also heavy losses to the said people and General Revenue alike in that the fruits have had to remain in the fields and perish:

Be It therefore Resolved that the Government be asked to afford this Industry such protection as will render it incumbent on the buying companies operating here to lift all available marketable fruits from time to time or additional company or companies be speedily induced to operate here with a view to relieving the present economic situation.

After discussion it was decided that representations should be made to Government in the matter with the request that enquiries be made as to what the present position really was.

(b) *Land Settlement for Youth of Jamaica—Claremont Branch.* The following was read:—

Whereas the Government Land Settlement Schemes seem to make no provision for settling on the land young men and boys who have no money to make initial payments and almost entirely provides land for those who can arrange to pay for their lands on the terms prescribed by Government:

And whereas a very large proportion of young men leaving school are unable to find money for taking up land and thus tend to drift rapidly into habits of unemployment and idleness or go to Kingston seeking work most often unsuccessfully :

Be It Resolved that Government be asked to consider or formulate some scheme for placing aside a number of plots of land in each Land Settlement for the purpose of training boys of good character and recommended as suitable by their teachers, ministers or others in the practical side of Agriculture, supervision and training to be provided by Agricultural Instructors, Inspectors of Plant Diseases and other travelling officers of the Agricultural Department, and that after satisfactory training these young men be given the land which they have cultivated on very liberal purchasing terms.

Further that this would be a most opportune time to press on the attention of the Government the need for such a scheme and to solicit the interest of the Jamaica Welfare Ltd., in the matter.

And we are of the opinion that 'Rural Retreat," St. Ann,—if started as a Land Settlement—would be a most suitable point for the inauguration of such a plan.

After discussion it was decided that the Branch be advised that the Board did not see its way to recommend the resolution to the Government.

(c) *Land Settlement Ex-Service Men—Medical Services—Coolshade Branch.* It was decided that the resolution which was as follows, be referred to the Government:—

Whereas the Ex-Service men of this Island have been placed in the interior parts of the country in order to make a livelihood, and whereas these places are so far away from public places, without the aid of Medical services, or other business places to obtain something in an emergency :

Be It Resolved that the Government through the Jamaica Agricultural Society be asked to take up this matter with the proper authorities, in order that the above-mentioned aids be looked after in these Settlements.

(d) *Sanitary conveniences for Poorer Classes.* This resolution asked that Government be requested to aid the poorer class of people to meet the demands necessary for these buildings.

The Board directed that this should be referred to the Parochial Board of Clarendon as the resolution emanated from the *Rock River Branch* in that parish.

(e) *Housing Conditons—Rock River Branch (Clarendon).* This resolution asked that Government be requested to extend their Scheme for proper housing beyond the limits of Kingston and St. Andrew.

It was decided that this resolution should be referred to the Parochial Board of Clarendon.

(f) *Agricultural Produce Law—Amendment of.* This resolution from the Toll Gate Branch asked that Cashew nuts and Goat Skins be included in the Island Produce Law Class 1.

It was decided that the matter be referred to the Advisory Board under the Agricultural Produce Law.

(g) *Inspection of fruits for local markets.* This resolution from the St. Elizabeth Branches Associated was not entertained.

(h) *Analysis of Soils—St. Mary Branches Associated.* This resolution asked that provision be made by Government to enable farmers to have analyses of soils made free of charge.

The Board decided that the Branch be advised that the Department of Science and Agriculture were in a position to carry this out.

(i) *Sale of Fertilizers.* Resolution from the St. Mary Branches Associated advocated that the Society sell fertilizers to members at the actual cost and also carry out tests of such fertilizers in co-operation with the Department of Agriculture and the members of the Society.

It was decided that the Association be advised that supplies of fertilizers are made available to members through the Society in large

and small quantities, and that experiments have been in operation for some time in connection with the different types of fertilizers.

(j) *Registration of Small Stock.* Resolutions from the Porus Branch and the Portland Branches Associated were submitted advocating the recording of sales of small stock made for butchering, the licensing of butchers and also the inspection of the stock to be slaughtered.

It was decided that the matter should be referred to the Parochial Boards of both parishes.

(k) *Sale of Poisons—St. Mary Branches Associated.* This resolution stated that druggists refused to handle poison supplied by the Society and requested that such poisons should be made available to Branch members through officers of a Branch or the Instructors.

The Board did not agree to this.

(m) *Control of Tuberculosis in Cattle.* This resolution from the Thompson Town Branch asked that representations be made to Government with a view of locating the presence of the disease in animals reared for the production of milk and beef.

It was decided that the resolution should be forwarded to the Government.

Reports from Committees.

(a) *Instructors.* The following was presented:—

To the Board of Management:
Gentlemen:

Your Instructors' Committee met this morning and beg to report as follows:

1. That a letter be sent to the Acting Secretary, sympathizing with him in his illness and wishing him a speedy recovery.
2. That it be recommended to the Board that a small committee of the Board be set up to enquire into the matter of the Penny Savings Bank at Wakefield, arising from Instructor Thompson's Report and comment thereon.
3. That a letter of thanks be written to the Officer of the Department of Science and Agriculture who had prepared the model lecture on Panama Disease.
4. That Resolutions from the St. Mary Branches Associated and the Lower St. Andrew Branch, with reference to Agricultural Headmen, be referred to the new Instructors' Committee to be appointed.
5. That Instructors Hastings and McLaren be granted leave of absence for the month of September as per schedule.
6. That the Fyffes Pen and Golden River Branches be granted affiliation.
7. That the matter of the transfer of the Porter's Mountain Branch from Instructor Hastings to Instructor Kelly be investigated by the Supervisor for the area and reported on.

(Sgd.) G. SEYMOUR SEYMOUR,
4th August, 1937. Chairman.

The Report was adopted and the Supervisor was directed to make investigations regarding the matter of the Penny Savings Bank at Wakefield.

Office.

(a) *Leave: Miss N. Cooper*—ten days (sick). It was submitted for the information of the Board that, on the presentation of a Doctor's certificate, ten days leave of absence as from the 15th July, 1937, had been granted.

Shows.

(a) *Exchange Branch—Application for Grant.* Letter from the Exchange Branch was submitted requesting that a grant be made toward their proposed Show for Easter Monday, 1938.

The Board regretted that they were unable to make such a grant.

Report of Second Meeting of B.W.I. Fruit and Vegetable Council. The Report was received and laid on the table.

Resolutions from Branches.—

The Board directed that the following should be dealt with and forwarded to the proper authorities.

(a) *Tweedside re Government School Buildings.*
(b) *St. Elizabeth Branches Associated re Inspection of Fruits and Vegetables exposed for sale.*
(c) *St. Mary Branches Associated re:*
 (i) *Amendment of Authorised Persons Law;*
 (ii) *Payment of Authorised Persons' Claims* (2).
(d) *Glengoffe re Amendment of Authorised Persons Law.*
(e) *Snowden re Public Works Department taking over neglected roads.*
(f) *Birnamwood re additional duty on Red Peas.*
(g) *Aberdeen re:*
 (i) *Telephone for Aberdeen Post Office.*
 (ii) *Registrar for Aberdeen.*
(h) *Red Hills (Clarendon) re Permanent Show Grounds.*
(i) *Wakefield (Trelawny) re Tobacco Industry.*
(j) *Strawberry re visit of His Excellency to the district.*
(k) *Prospect re:*
 (i) *Rejection of Bananas.*
 (ii) *Post Office at Crawle River.*
(l) *Smithville re bridging Devil's Gully and Big River.*
(m) *Maidstone-Bourbon re Agricultural Headman.*
(n) *Regale re Lands for Cultivation.*
(o) *Mahoe re:*
 (i) *Protection of Water at Wray Piece.*
 (ii) *Bangor Ridge as Centre for Collecting Taxes.*
(p) *St. Catherine Branches Associated re:*
 (i) *Peas Industry.*
 (ii) *Water Supply* (2).
 (iii) *Reduction of Water Rates: Paul Mtn. and Labour Hall.*
 (iv) *Water Tank for Paul Mountain.*
 (v) *Dispensary at Bellas Gate.*
 (vi) *Government School.*
 (vii) *Price of Water.*
(q) *Trelawny Branches Associated re Asphalting Streets of Country Towns.*
(r) *O'Meally re Buying Bananas by Weight.*
(s) *Long Road re:*
 (i) *Certified Maternity Nurse:*
 (ii) *Road.*
(t) *Deeside re Road.*
(u) *Creighton re Land Settlement Scheme.*
(v) *Sturge Town re Holding of Agricultural Show in St. Ann.*
(w) *Portland Branches Associated re:*
 (i) *Growing of Peas in place of Bananas.*
 (ii) *Agricultural Headman for Portland.*
(x) *Turnberry re Post Office.*
(y) *Rock re Government School.*

Mr. McKay left and as there was now no quorum the meeting adjourned to Wednesday, the 1st September, 1937, at 11.30 a.m.

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LECTURE ON EEL WORMS.

A Serious Pest of Truck and Garden Crops.

Delivered by W. H. Edwards, D.I.C., F.R.E.S., *Government Entomologist, during the Summer Course of Lectures and Demonstration held at Hope.*

The Organism which causes the Disease

Many species of worms live in the soil; most of these such as the common earthworms are not injurious to plants. In the tropics and subtropics, however, certain species of microscopic worms (known to science as Nematodes) which breed in the soil enter into the roots of plants, where they live as parasites.

Those worms, on account of the wriggling movements they make when moving between soil particles, and also on account of their thread-like shape, have been commonly called 'eel-worms.'

The disease of tobacco, of tomato and other plants known as "Root Knot' is caused by such 'eel-worms' which, by penetrating into the roots of plants cause swellings and malformations which appear as 'knots' along the roots.

Appearance of Plants which have become Infested.

Plants which have many roots infested, present an anaemic and sickly appearance, they appear stunted and their leaves usually assume a yellowish tinge.

Infested roots ceasing to function normally in providing water to the higher parts of the plants, the foliage of heavily infested ones usually wither rapidly unless they are constantly watered.

Struggling to obtain an adequate supply of nutrients from the soil, attacked plants react by emitting a large number of rootlets; but these, unfortunately, become in their turn infested as soon as they are produced.

When plants become infested whilst they are still young, their growth is greatly impaired and they remain stunted even if they are heavily manured and copiously watered.

As no injury to the stem or to any other parts of the plant above the ground can be noticed, the casual observer is usually puzzled by such state of affairs. Finding no apparent reason for his failures, the grower who knows that the physical condition and chemical composition of his soil are good, is led to believe that the seeds sowed were of a variety which is not suitable; if not advised, he frequently loses time and money in useless trials. It is therefore necessary that all growers should know how to diagnose the presence of this pest in their fields.

Identification in the Field of the Cause of the Disease.

By examining the roots of plants showing symptoms of unthriftiness the trouble when caused by eel-worms can usually be easily determined by the galls and 'knots' present on the infested roots.

The photograph, reproduced hereunder, of the root system of a tomato plant (collected on the Liguanea plain) attacked by eel-worms shows, in a typical manner, the swellings produced by the pest.

The size and shape of the galls produced by eel-worms vary to a great extent according to the number of worms which have penetrated the

tissues; when infestation has just started the galls appear as small beads along the roots. When numerous swellings have been formed the adjoining lesions coalesce and the roots become considerably swollen along most of their length.

Occurrence of Nematodes in the Soils of Jamaica.

We have found eel-worms in all the types of soil in Jamaica; they are, however, particularly abundant and thereby destructive in the sandy loams. On the clay soils it is only when susceptible crops had been repeatedly grown that eel-worms have been found to have more than a small economic importance.

Cultural practices aimed at improving the texture of soils, maintenance of humidity by irrigation or otherwise and cultivation of susceptible crops such as many kinds of vegetables, unfortunately, favour the multiplication of the pest in vegetable and flower gardens.

On account of the constant and abundant supply of food they obtain and through the fact that cultivation with frequent watering renders environmental conditions propitious to the multiplication and spread of the pest, fields where vegetables are grown are liable of becoming heavily infested within a few years unless precautionary measures are taken.

Control of the Pest in Infested Fields.

Though all over the world a considerable amount of studies have been made with regard to methods for controlling that pest, no really effective chemical or substance has yet been found which can be economically applied on the field scale to eradicate eel-worms.

In the colder climates where eel-worms are a major problem in green houses where vegetables and ornamentals are grown, control of this pest is achieved by passing live steam through the soil.

On the field scale such methods would be onerous. The multiplication of those parasites can, however, be controlled by agricultural practices aimed at starving the parasitic worms.

Bare Fallow.

Whilst many methods have been tried, the eel-worm population of a heavily infested soil can only be materially reduced if the field is kept under bare fallow during at least a year. All roots should previously be removed and burnt; during the whole period no weed or any plant should be allowed to grow whilst the soil is kept as dry as possible and aerated by repeated ploughing. We doubt that under conditions existing in Jamaica the application of the Bare Fallow method can be economically or otherwise applied.

The Use of Nematicides.

Various chemicals have been tried to eradicate eel-worms but their use has proved onerous and on the whole ineffective.

At this juncture we shall not therefore discuss whether eradication of the pest is a practical possibility, but we shall rather advise as to what should be done:

(1) To avoid infestation of new lands.
(2) To utilize already infested fields.
(3) What to do to minimize losses by preventing infestation of plants when they are young and most vulnerable.

To achieve these aims the following points should be understood:

PRECAUTIONS ONE SHOULD TAKE TO AVOID INFESTATION OF THE FIELDS BY THE INTRODUCTION OF THE PEST WITH NURSERY PLANTS.

So far as Truck Crops and Tobacco are concerned much damage frequently occur because seedlings already infested whilst in the seed beds are used for planting. The danger of introducing the pest in your fields by purchasing seedlings of doubtful origin is too obvious tc necessitate more than a mention.

THE EFFECTS OF ROTATION OF CROPS WITH REGARDS TO EEL WORMS.

A peculiarity of parasites such as eel-worms is that though they can can live indifferently on a great variety of plants they adapt themselves to a certain kind of plant when it has been the only host which they have found to live on during several generations. This phenomenon is usually referred to as the formation of 'biological strains.'

The species of eel-worm which concerns us, *Heterodera marioni*, can live indifferently on very many kinds of plants. Tomato, cabbage and tobacco are those we have more frequently found carrying heavy infestations.

Experiments we carried out on the Liguanea Plains have shown that when tomato was grown on soils susceptible of becoming heavily infested, it happens that eel-worms become so numerous that a second crop cannot be profitably grown immediately afterwards on the same plot. The second plantation of tomato collapsed completely before the plants bore fruit. On the same land, however, and on adjoining plots equally susceptible but different kinds of plants, such as Garden Eggs and Cabbages were successfully grown. They were infested but to a lesser degree. It thus appears that the eel-worms in that particular field had got used to infesting tomato and had, if we may use the expression, been disconcerted by the sudden change of diet.

It is obvious that this does not mean that one should grow susceptible crops following one another; if we mention that phenomenon, it is to demonstrate the advantage of constant rotation of crops for checking the excessive multiplication of eel-worms and as a means of avoiding severe losses.

ROTATION OF CROPS.

To reduce the eel-worm population of a soil, and to prevent it from becoming heavily infested, susceptible crops should always be followed by immune ones, or at least by those which being not likely to carry heavy infestation will not help to increase the existing eel-worm population.

To enable Truck crop Growers to cultivate with discrimination their infested lands, we shall now mention the results of our investigations with regards to the relative susceptibility of plants more commonly grown in Jamaica. They may be grouped as:—

(1) Plants which we have frequently found to carry heavy infestation.

(2) Plants which have not been found heavily infested though growing on heavily infested soils.

(3) Leguminous plants which carry heavy infestations and which, therefore, are dangerous to grow as cover crops where tobacco and vegetables susceptible to the pest are cultivated.

(4) Leguminous plants which have been found not to harbour the pest and which, therefore, could be advantageously used for green manuring or as cover crops.

(1) *Plants which are Particularly Susceptible to the Attack of Eel-Worms.*

A list of the plants which have been recorded as harbouring eel-worms would be a very long one, very few crops being immune to those parasites. Those which we believe should in that respect receive special attention in Jamaica are:—Tomato, tobacco, eggplant, beetroot, melons, cucumbers and celery, which we have frequently observed infested to the extent that in the case of tomato, beetroot and melons, whole plantations were annihilated before a crop could be reaped, whilst for the other, the yields were greatly reduced.

Other plants such as pumpkins, cabbages, okra, sweet pepper, radishes and beans, though also very susceptible, suffer to a lesser extent because in rich soils their growth is so rapid that they are able to overgrow the disease. In the case of pumpkins, new roots are produced along the vines creeping over the soil, faster than the older ones become destroyed. The last mentioned plants can thus be profitably grown even in heavily infested soils, but as they carry heavy infestations they should not be planted when it is desired to reduce the population of eel-worms in a field.

In flower gardens, carnations, coleus and balsamin are frequently observed collapsing completely from eel-worm infestation.

The plants above mentioned do not, unfortunately, form an exhaustive list of those recorded as being very susceptible; they are only those which we have personally observed as being so under local conditions. It would therefore be unwise to grow them in soils known to be infested by eel-worms.

Some years ago when attempts were made to establish a silk industry, the mulberry trees planted to feed the caterpillars were heavily infested by eel-worms. Papaw also carry heavy infestations.

(2) *Plants which are Resistant or Immune to Infestation and which can be Profitably Cultivated on Our Infested Soils.*

Many plants of economic value, though not really immune, do not become heavily infested by these parasites and profitable crops can be obtained from them on soils which are infested to such a degree that no susceptible crop could be profitably grown thereon.

During the trials we have made in plots where susceptible plants such as tomatoes, garden eggs, etc., had actually died from the attacks of the pests, the following vegetables have grown fairly luxuriantly: Brussels sprouts, beans, lettuce, carrots, callaloo, gungo peas, Irish potatoes, turnips and onions.

Sweet Cassava, Bitter Cassava and Scallions also grown on highly infested soils were not attacked.

In the flower gardens, roses, poinsettis and hardy perennials belonging to the family Compositae, i.e., cocmos, marigold, etc., can be used to fill flower beds which have become infested by nematodes.

(3) ***Leguminous Plants which carry Heavy Infestations and which, therefore, it is dangerous to grow as Cover Crops where Tobacco and Vegetables susceptible to the pest are to be cultivated.***

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Many varieties of leguminous plants harbour eel-worms; the galls that those parasites produce should not be mistaken for the 'nodules' produced by nitrogen-fixing bacteria. Whilst the 'nodules' produced by the latter are attached loosely at the side of the rootlets the knots caused by parasitic nematodes involve all the tissues of the roots which become completely deformed.

It is, therefore, essential that planters should learn to differentiate between the 'nodules' produced by nitrogen-fixing bacteria from the 'knots' produced by nematodes; whilst nitrogen-fixing bacteria enrich the soil, eel-worms are destructive pests. Legumes used for green manuring but which harbour nematodes may do more harm than good, and should never, therefore, be grown in Jamaica. We have found the common variety of cowpea, grown here frequently carry heavy infestation; Jerusalem peas also, but to a lesser extent.

(4) *Leguminous Plants which have been found not to harbour the Pest and which can safely be used for green manuring.*

During the experiments we conducted, *Crotolaria spectabilis*, *Crotolaria usaresmensis* and *Tephosia candida* grown in the same heavily infested field with cowpeas, tomatoes, garden eggs, and many other susceptible plants, remained uninfested; we therefore consider that they can safely be used as cover crops.

THE USE OF SUSCEPTIBLE PLANTS AS INDICATORS TO DETECT WHETHER A FIELD IS INFESTED OR NOT.

As already explained, certain plants, such as tomatoes, which are very susceptible to nematodes when grown on infested soils, rapidly exhibit symptoms of infestation: their roots within three weeks showing very clearly the knots caused by the nematodes.

If one desires to know whether a field in which he wished to grow a susceptible crop is already infested heavily or not he can ascertain the degree of infestation of his soil by growing therein a few tomato plants as 'indicators.'

By the size and abundance of the galls produced on the roots of the 'indicator' plants or by their absence he will be in a position to judge whether or not he should pursue his projects.

TREATMENT OF SOIL OF SEED BOXES AND NURSERIES SO AS TO OBTAIN UNINFESTED SEEDLINGS. ...

The roots being smaller and fewer during the early life of all plants even a small infestation at that stage retards considerably the growth of the seedlings. Planting infested seedlings usually leads thus to disaster with regard to the crop, and as aforesaid, is also a frequent means of conveying the pest to the fields.

It is therefore particularly important to raise seedlings free of nematodes. To attain that aim, measures should be taken to disinfect soils in which the seeds are sown. This can be achieved by treating the soil with chemicals or by killing the worms by heat.

Formaldehyde which also acts as a fungicide has been recommended by several authors as a soil disinfectant against nematodes. One part of commercial formaldehyde is dissolved in 50 parts of water and the liquid is watered on the surface of the ground at the rate of 1 quart per square foot.

During the comparative experiments we carried out we have not been satisfied with the results obtained with formaldehyde.

The Sodium-Cyanide-Ammonium Sulphate Method.

Amounts of materials. 4 ozs. Sodium Cyanide and 6 ozs. of Ammonium sulphate are used per square yard of seed bed surface.

The 4 ozs. of Sodium cyanide dissolved in 2 gallons of water is watered on the well-ploughed seed bed, taking care to have an even distribution of the liquid. If necessary, fresh water should be again applied so as to wet the soil to a depth of 18 inches or until all the soil in the seed boxes is moderately wet.

Dissolve the Ammonium sulphate in 1 gallon of water and apply evenly on the square yard surface which has just received the Sodium cyanide and water again with just enough pure water to carry the ammonium sulphate down.

Ammonium sulphate reacts with the Sodium cyanide, liberating hydrocyanic acid gas in the soil, and this kills the nematodes. It unfortunately happens that this treatment though applied several days before sowing, retards germination and reduces sometimes to a marked extent the percentage of seeds which grow. The seedlings we obtained however, were sturdy and free of nematodes, though heavily infested soil had been chosen for the experiment.

Caution.—As Sodium cyanide is extremely poisonous, this chemical should only be handled with all due precaution and the solution should not come in contact with the skin, especially if there are abrasions.

Soil Sterilization by Heat

1. *The use of Steam.*—As already mentioned, eel-worms can be killed by passing steam through soil. When possible, that method should be applied as it is effective and economical for small amount of soil as required for nurseries and seed boxes.

2. *Burning the Soil.*—An emperical method evolved by peasant gardeners and which I have found applied with great success in other parts of the tropics where as in Jamaica, nematodes were a serious problem, consisted in disinfecting the soil by 'burning' it.

This was done in the following manner:—The top, i.e., the arable soil where the seed bed is to be made or where the soil for the seed boxes is to be taken is first removed and heaped aside. Dry branches, leaves, straw, etc., are then heaped into the trench thus made and fire set. Whilst the wood is burning shovels of dry soil are thrown over the materials in combustion. The soil thus 'burnt' and mixed with ashes is then used in seed boxes or is levelled to form seed beds. In localities where damping off and eel-worms are common, it has been found that by that procedure healthy seedlings can be easily raised without more complicated or expensive methods having to be applied.

Summary

Eel-worms have been found widely distributed in Jamaica and cause severe damage to tobacco and a great number of minor crops, especially vegetables.

Conditions and cultural methods necessary for intensive cultivation make that the pest is usually prevalent in vegetable and flower gardens.

The external symptoms exhibited by infested plants are so characteristic that growers should be able to detect the presence of the pest at an early stage. 'Indicator' plants also permit testing soils before susceptible crops are to be grown on an extensive scale.

Eradication of eel-worms in a field is costly and difficult of applica-

tion, and frequently ineffective. With regards to the problem created by that pest the aim of cultivators should be:—

(1) To prevent the infestation of new lands.
(2) In soils where eel-worms already exist, to keep their population as low as possible.

1. *To prevent infestation* care should be taken not to introduce the pest by means of infested seedlings or by transportation of soil and plant refuse in manure.

2. *Lands which are already infested.* To keep existing population at a low ebb susceptible crops should *not* be grown one after another; after a susceptible crop has been grown the plants should be uprooted and burnt and the soil ploughed and allowed to dry. A resistant or an immune cover crop should then follow. Rotation of crops should thus be carefully planned.

A list of the plants which show varying degrees of resistance towards the pest has been given.

When susceptible crops are grown on infested lands, it should be remembered that success will depend on the results of a fight against time, as the longer the plants remain in an infested soil, the more severe will the infestation become. The axiom should therefore be: 'Leave the plant during as short a time as possible in the infested soil.' This is achieved:

(a) by growing healthy seedlings in uninfested soil;
(b) when the plants are set in the fields they should be manured and watered in such a way that they will outgrow the infestation.

Soils for seed boxes and nurseries can be sterilized by means of steam or by 'burning.'

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OUR LOCAL FOODSTUFFS CAN SUPPLY ALL THE VITAMINS WE NEED.

(By DONALD MACDONALD, *Accountant, Jamaica Agricultural Society.*)

Although this is a very difficult problem for many nations, those of us who live in the West Indies have very little cause to worry over our proper supply of Vitamins, as our local foods appear to be abundantly supplied with these very necessary health requirements.

Throughout the British Empire, efforts are being made to impress the value of Vitamins on the minds of everyone who values his British Citizenship, as good health is regarded among other nations, as an essential factor for their progress. The "Encyclopaedia Britannica" describes Vitamins as: "Substances of unknown composition, normally present in certain foodstuffs in minor quantities, the absence of which from the diet, leads to well-defined morbid (diseased) states."

We have no means of telling how many people, during the course of a year, were forced to go to the Doctor for treatment, but we are able to tell that no less than 138,023 cases were treated by our 21 Hospitals in 1935, so that is a pretty good indication that illness to a great extent is present among the population, and furthermore it can be said that a fair proportion of this illness may be traced to the absence of certain Vitamins on account of an unbalanced diet, resulting in undernourishment and poor health. Expensive foods can be very deficient in Vitamins.

The Journal for May, 1937, sets out a long list of foodstuffs which shows that most of our foods are very rich in Vitamins, and that a proper combination of these foods will give us all the Vitamins we need.

The League of Nations has just published a Report on the "Relation of Nutrition to Health, Agriculture, and Economic Policy," and stress is laid on the fact that "poverty and ignorance" remain the only formidable obstacles to health. That means that enough has been discovered about the functions of food, and how to eat correctly, that it is mostly the fault of the individual if he fails to follow the teachings of science, and allows himself to become a chronic sufferer by persistently indulging in an unbalanced diet.

Owing to the almost complete lack of knowledge of the functions of food, it is safe to estimate that 99 per cent. of our population are eating in an entirely haphazard manner, with harmful efforts to their bodies.

Faulty selection of foods where more attention is paid to quantity, without considering the importance of including those containing the essential substances, should be corrected. How are we to know how much to eat and what we should eat so as to obtain the best results?

To get the best results we should not attempt to eat more than what the body needs, so the scientists and nutrition investigators have discovered how to measure the amount of food needed by each class of worker, so that if the office worker attempts to eat as much as the labourer, he will soon find himself a victim to several ailments, caused by overloading his system with unwanted food, with the result that he has to resort to drugs, alcohol, or stimulants to buck up his jaded feelings.

At the same time while paying attention to quantity we have to pick out and include food which will supply Vitamins in sufficient amounts to keep the balance of health in our favour.

Food requirements are measured in terms of Calories, and careful research has laid down the following quantities for such class of worker:

Sedentary or Office Worker	...	2,500-3,000 Calories.
Light Manual "	...	3,000-3,500 "
Medium " "	...	3,500-4,000 "
Very Hard " "	...	4,500-5,000 "

What are calories? A caloric is a unit of heat. To produce heat we must use fuel, and as the body uses food as a fuel, it was found necessary to find out how many units of heat each food was capable of producing.

So as to get in all the Vitamins necessary, we must have a variety of foods, and we must also learn to combine them properly. This is difficult, but thanks to the work of the nutritionists, we are able to lay out the plan for two menus, suitable for the Office Worker and Labourer respectively. It is not possible here to introduce that complicated matter of Proteins, Carbohydrates, and Fats, though it is necessary to state that too much Protein, or too much starchy foods will unbalance the ration, and offset the good results, even though we pin ourselves down to the minimum number of calories needed.

A recent survey made in the U.S.A. disclosed that the average individual was eating nearly double the quantity of proteincalories daily. When a party of students allowed themselves to be experimented on by reducing their food to a minimum, it was found that their energy was tremendously increased, and they could get through a good deal more work without feeling tired.

This menu was designed for the sedentary worker. It is merely an outline, giving quantities, and showing the kind of foods that should be selected. The menu for one day is given, and suggestions made for variations on other days:

SUGGESTED MENU FOR SEDENTARY WORKER.

Item No.	Breakfast.	Protein Calories.	Total Calories.
1	One Orange	7	100
2	One cup Corn Flakes with one cup milk	40	293
3	Stewed Fruit, equal to about 8 Prunes	7	250
4	One cup Coffee with Milk or Cream ...	3	100
	Lunch.		
5	Cream of Tomato soup, one cup ...	30	270
6	1 Baked Potato with Butter ...	11	150
7	Bananas, ripe—2 medium	10	200
8	Lettuce, 1 small head, and Salad Dressing	6	125
9	Coffee with Cream and Sugar ...	3	100
	Dinner.		
10	Clear Vegetable Soup, one cup ...	4	50
11	Liver, 3 ozs.	50	140
12	Baked Yampie, with Butter ...	11	150
13	Carrots, 4 small	10	100
14	Spinach, one cup	15	43
15	Lettuce, 1 head	6	125
16	Fruit Salad, raw—one cup ...	6	125
17	Baked Bananas (2 medium) ...	6	270
18	Cocoa or Coffee with milk (1 cup) ...	17	125
	Total Calories	242	2,716

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From 4½ or 5 Months on
For Egg Production
PIONEER LAYING MASH
PIONEER SENIOR SCRATCH

For Table Use Broilers and Capons
Feed same as above but use PIONEER BATTERY Chick Mash in place of Pioneer Chick Mash and PIONEER FATTENING MASH in place of Pioneer Growing Mash and Pioneer Laying Mash

Turkeys:

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Pioneer TURKEY Starter

From 6 Weeks old on
Pioneer TURKEY Grower

Pigeons:

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Items 1-18 as above comprise only one food in each group, and may be varied as often as taste and circumstances allow. The following indicates how each item may be varied:—

Item 1.—½ Grapefruit or 1 cup Tomato Juice, or a slice of Papaw, or Pineapple, or any other fruit in like quantity.

Item 2.—Two thin slices Wholewheat Toast buttered, with 1 cup milk. 1 cup Oatmeal with 1 cup milk. Any other grain cereal with 1 cup of milk, such as Corn Hominy, etc.

Item 3.—Baked apple with ¼ cup cream: stewed Raisins, 8; Stewed Cashew, 2; Baked Bananas, 2.

Item 4.—Cocoa or plain milk, or any hot or cold beverage.

Item 5.—Soup may be made from a variety of vegetables.

Item 6.—Wholewheat bread or Muffins with Butter: any starchy Vegetable baked, such as Yam, Yampie, Sweet Potato, etc.

Item 7.—Dates, 8; Figs, 3 large; Apples, 2; Grapes, about 40; Oranges, 2; any other sweet fruit, dried or fresh in like quantities.

Item 8.—Cabbage, Water Cress, or any raw vegetable Salad with Salad Dressing.

Item 9.—Same as Item 4.

Item 10.—Clear Soup may be made from a variety of vegetables.

Item 11.—Eggs, 2; Lean meat; Fish; Chicken, about 3 ozs.

Item 12 —Any starchy vegetable or whole-grain food in proportion.

Item 13.—¾ cup Green Peas; 3 or 4 small onions; Cauliflower, small head, or any similar Vegetable.

Item 14.—1 cup String Beans; 1 cup Cabbage; 1 cup cooked Turnip Tops, or any other leafy Vegetable.

Item 15.—1 cup Cabbage with 1½ tablespoon Salad Dressing.

Item 16.—Any raw fruit in proportion.

Item 17.—Same as Item 3.

Item 18 May be omitted, and Fruit Juice substituted.

Jamaica provides such a variety of Fresh Fruits and Vegetables that it is quite easy to produce most of the necessary items named above. All you have to do is to decide to which class each food belongs, and select one to your liking. Don't allow this menu to tire you by following it to the letter; change it a bit, when your appetite demands something else, and on Sunday take a day off and eat just as you like.

Some people are permanently tired, which is a sure sign that the liver is being overworked by eating more than the body needs. The

symptoms of poor nutrition are lack of energy, inattention, poor memory, slow comprehension, and nervousness. It is presumed that most of those to whom this menu is suitable are Office Workers, such as Solicitors, Clerks, Typists, School Teachers, and so on, who should be able to try out the suggestions if they are dissatisfied with their present state of health. As the League of Nations Committee on Nutrition points out, ignorance and poverty are the only drawbacks to good health, so if a start is not made at once we are likely to stand condemned in the eye of the world whenever our annual Hospital Returns are published.

The following combination suitable for Field Workers is made up from data supplied by two Doctors, with vast experience in Tropical Dietaries, while stationed in Sierra Leone. (Drs. Leitch and Watson).

In one or two instances, quantities are slightly varied, and a few additions made, as the Items are so abundant in Jamaica.

	No. of ozs.	No. of Calories.
BREAKFAST 5 30—6.00 A.M.		
Cocoa	1	150
Sugar and Milk	1½	174
Whole-meal Bread	4	284
LUNCH 10.30—11 A.M.		
Foofoo (cooked)	24	570
Beef or Liver	2	125
Lettuce or Callaloo or Tomato	2	10
Coconut Oil	1	264
1 Ripe Banana or other fruit		60
DINNER 4.30—5.30 P.M.		
Rice and Peas:		
Brown Rice	12	
Peas	4	
Coconut Oil	1	1,885
Beef or Fish	2	125
Yam or Sweet Potato	4	200
Tomato	2	13
Sundries, such as Avocado Pear, Seasonings.		
Soup, etc.		140
Total		4,000

While this is not at all a difficult menu to follow, it can be considerably improved on here, owing to the fact that we possess such a variety of local foodstuffs. The Government Scheme to encourage production and marketing of vegetables and small fruits will result in greater quantities of vegetables being produced, and the surplus may be used to good advantage. The cost of the ration outlined above should not exceed 9d. per day, but at the present scale of wages here, even this small sum will present difficulties to a labourer with two or three dependents to support.

An ideal opportunity for improving conditions seems near at hand as soon as the funds donated through the generosity of the two Fruit Companies become available for social uplift work. It is not to be expected that the organization which has been entrusted to carry out the work will be able to make much progress until the people are freed

of the spectre of malnutrition which appears to be responsible for their present distressed circumstances. The first practical step could take the form of communal kitchens following on the lines of the School Children's Lunch Kitchen established in Kingston, where as many as 7,243 lunches were sent out in one month, at a cost of 1½d. each. These units could be centred in places where large numbers of labourers, or other workers are employed, and would be a boon to cultivators in the districts in helping them to dispose of their surplus produce. They may even be induced to take their meals from these kitchens, supplying ground provisions or other articles in exchange for meals cooked on scientific principles, until they learn to do so for themselves.

Within the next few years, the question of nutrition will take on greater importance, as the League of Nations intend to urge all Governments to adopt what they term—

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THE WORLD COFFEE SITUATION.

International Institute of Agriculture, Press Service.

Rome, July 1937.

The estimates at present available for the production of coffee in 1936-37 supplied to the International Institute of Agriculture by the Government and various special organisations in the producing countries refer to over 90 per cent. of world production and thus enables the volume of the world crop in the current season to be established with sufficient accuracy.

Though about 529 million pounds larger than the figures of last season, the estimate of the world crop for 1936-37 remains appreciably smaller than the crop of the three preceding seasons. However, on the whole, the coffee season 1936-37 may be placed amongst those which, attaining neither a maximum nor a minimum as so often determined by the great fluctuations characteristic of the crop, ensure a good average production.

The geographical distribution of the coffee crops shows fully on the one hand the tendency to extension of the coffee crop in recent years which is characteristic of the coffee crop in the countries of Central America and still more in those of Africa and, on the other hand, the fairly stable character of the Asiatic crops, especially those of the Netherland Indies and of India.

The first place as a great coffee producer remains, however with South America, which supplies about four-fifths of the world production, with Brazil at the head, followed at a long distance by Colombia and Venezuela. In the 1936-37 season the total volume of crops in the producing countries of South America has on the whole showed an appreciable reduction with respect to the crops of the three preceding seasons, despite the very abundant production of Colombia and a record crop in Venezuela; the reduction is, in fact attributable exclusively to Brazil, where crops of the last two seasons remained very much below normal. The determining factor in the diminution of the Brazilian crops must be sought in the policy of protecting the coffee market that the Brazilian Government has pursued for some years and which is reflected in the abandonment of the area occupied by the less productive plantations.

The world economic depression, characterized for a number of years by increasing restrictions of exchange and, in several countries by a policy of quotas, has appreciably influenced the import trade in coffee and led to a severe contraction of world demand, while at the same time checking the tendency to increase that was observed in the years following the World War. The volume of world net imports, which was 2,336 million pounds in 1909-1913, rose to 3,064 million pounds on the average from 1926 to 1930 and reached its maximum in 1931 with 3,594 million pounds. Subsequently and especially in the following three years world demand very markedly declined but still absorbed on the average a quantity of coffee 132 million pounds larger than the average for 1926-30.

In 1935 and 1936 an appreciable recovery was experienced in the world trade in coffee and net imports attained very high figures, only inferior to the record of 1931. It should, however, be noted that, even with the tendency to increase, the import trade in coffee showed different characteristics in the principal world importing centres, especially as regards the United States and Europe, which together

absorbed more than 90 per cent. of the world imports. In the United States the tendency to increase and the corresponding change in the figures was more marked than in Europe; imports in the last two years were double the pre-war average, while the maximum attained in 1931 in European countries as a whole exceeded only by a quarter the average quantity imported in the quinquennial period prior to the War. However, in the latter continent, as in the United States, net imports in the last two years show a fairly appreciable increase with respect to the three preceding years and to the 1926-30 average.

The policy of regular destruction of coffee, decreed in 1931 by the Congress of the producing States in Brazil "in order to obtain as soon as possible a betterment in the statistical position of coffee, the selection of commercial qualities and the elimination of all useless expense in storage" continued without interruption: the total quantity of coffee eliminated in Brazil from 1931 to the end of December, 1936 was 5,259 million pounds, a quantity exceeding by more than 50 per cent. the average annual imports of the last six years.

In consequence of this radical measure, the statistical position of coffee, though improved, remains rather heavy, especially if account is taken of the good prospects of coming crops in Brazil and other large producing countries. It may thus be expected that the various organisations for the control of coffee will continue during the coming season to regulate and support their respective internal market. The greatest obstacles that hinder the policy of regulating the internal market, as pursued by the producing countries consist, however, in the present restrictions on international exchange of goods and money and particularly in the customs duties that are imposed on coffee imports into the majority of consuming countries, especially in Europe, where the limitation of coffee consumption is accompanied by the increasing use of substitutes.

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CASHEWS.

Reproduced below from "The Tropical Agriculturist" (Ceylon) for January, 1937, is an article on the production of Cashew Nuts in Mannar. This article should prove interesting to many persons here, as although there are areas well adapted to the growing of this crop, little or no interest has been taken in it except to gather the fruit and nut when the season comes round.

In a previous issue of the Journal reference was made to the Cashew Nursery which has been established by the Society at Ehren in Clarendon. Plants grown in bamboo pots are now available for distribution at 1½d. each and persons desirous of obtaining supplies should make application without delay.

EDITOR.

THE PRODUCTION OF CASHEW NUTS IN MANNAR.

W. R. C. PAUL, M.A., M.Sc., D.I.C., F.L.S.,
Divisional Agricultural Officer, Northern Division
and
C. CANAGARATNAM, Dip. Agric. (Poona),
Agricultural Instructor, Mannar.

Although the cashew tree is not extensively grown in Ceylon, there are a few areas situated both in the wet and dry zones of the island where it is found in small groves. It thrives, chiefly, on the sandy soils of the dry zone along the eastern coast near Batticaloa and to a lesser extent in the small Island of Mannar. It receives the least amount of attention in comparison with most other crops of economic value in Ceylon and even exists wild in many of the areas where it is found, e.g., in the Western Province and in the Tenmarachy Division of the Jaffna district. The chief use of the tree lies in its kernels which are sold unpeeled in the local markets after extraction by roasting and shelling of the nuts in which they are enclosed. During the season, the kernels from immature and unroasted nuts are also sold, unpeeled and raw as well as, in smaller quantities, peeled and boiled with the addition of a small amount of saffron. They are made into packets containing a handful of kernels, prepared either way as stated above and are wrapped in mango leaves folded over as a cover. They are thus sold by women vendors in Colombo.

The cashew tree is also used as a supply of firewood for the Colombo market while it is considered of much value both in the Eastern Province and in the Jaffna Peninsula as a catch crop for coconuts on the poorest soils which are improved by it as a result of the large accumulation of fallen leaves on the surface of the soil under each tree. Coconuts are planted under the shade of the cashew and in this way soils which are too poor for growing coconuts are made more suitable.

There is, however, no export trade either of the unroasted, mature nuts or of the kernels which are extracted from the roasted and mature nuts in spite of the fact that there is a large demand for the former from the cashew factories on the west coast of India and for the latter from the United States of America.

In Mannar, there is a small but important industry in the production of cashew nuts. The tree is grown in groves of about 1 to 2 acres each and it is estimated that there are about 270 cashew groves with a total extent of about 509 acres. Cashew nuts rank third in order of production after palmyrah and coconuts in Mannar Island. It is estimated that there are about 250,000 lb. of nuts produced annually in Mannar.

The groves are enclosed by low brushwood fences. During the first 2 to 3 years these are about five feet high in order to prevent cattle and goats destroying the young plants, but after this period, the brushwood is only maintained at about three feet, mainly to act as a protection against theft by the demarcation of each grove in this way. The establishment of fences enclosing each grove is considered to be one of the chief difficulties in Mannar owing to the scarcity even of brushwood which is the only material available for fencing purposes from the nearest waste lands in the Island. These brushwood fences need to be reconstructed about every six months.

Soil Conditions.

It is well known that the cashew can grow in soils which are unsuitable for most other crops and in areas such as near the coast where strong winds are prevalent. It is thus found to thrive on the sandy soils of Mannar and Batticaloa, but it will not grow in localities where the sub-soil water is too brackish. It is for this reason that the tree does not grow on the strip of land extending towards the west of the Island for about 2 to 3 miles from the town of Mannar, the only vegetation being that of *Acacia planifrons* (T. *udai*) which is more tolerant of arid and saline conditions.

Propagation.

The cashew is propagated in Mannar entirely by seed, well-dried nuts being used for this purpose although the tree can be budded on its own root stock. Planting at stake is not, usually, practised as, after germination, the fleshy cotyledons or seed leaves that develop are liable to be attacked by field rats and insect pests. As the seedlings are not easily transplanted the nuts are first germinated in palmyrah baskets—known locally as *kuddans*—which are about 9 inches high and 4½ inches in diameter.

Before germination, the nuts are dried in the sun for about 10 to 14 days. The seedlings which develop from fresh nuts are considered to be weaker and therefore more liable to insect attack. Experiments carried out in this Division on the method of germinating the nuts have indicated that they are best placed in the vertical position with the point of attachment of the nut to the fruit on top, the nut being just covered over with a thin layer of soil. Shade is provided until the seedlings have developed 3 to 4 leaves. When baskets are not available the nuts may be germinated in nursery beds covered over with a layer of straw. Watering should be given daily or as often as is necessary to keep the soil moist.

Planting in baskets is usually done between the months of June and July. Germination takes place within about 8 to 10 days and the seedlings are kept in the baskets for about a month or until such time when the tap roots become too long to remain in the baskets. By this time each seedling develops about 4 to 5 leaves and it is then transplanted in Mannar about August in the open. Holes of sufficient size are dug so as to take each plant, but on other soils which are not sandy, holes about 2 feet square and 2½ feet deep should be dug and filled with good soil.

It is advisable to have 2 to 3 seedlings in each hole and after about a year to leave only the most vigorous. In this way any losses caused by transplanting, etc., may be reduced.

As soon as the seedlings are planted out they are pot watered from small wells dug in the sand, once every two days and after about a month, once in four days until the north-east monsoon arrives. Watering when carried out is only done in the mornings, about two gallons being given to each plant. After the north-east monsoon is over, watering has again to be commenced from about January and is continued until next October when no further watering becomes necessary.

Planting Distance.

There is no definite spacing adopted for planting cashews in Mannar. There are usually not more than about 10 to 15 trees per acre, though there is space available for more trees. Owing to the strong winds which prevail there the plants develop a low and spreading habit. Under these conditions, a spacing of 50 x 50 ft. is not too wide, but in localities where there is some shelter from strong winds and the trees are kept pruned by removal of overhanging branches, a spacing of 40 x 40 ft. could be adopted. The seedlings should first be planted out at 20 x 20 ft. apart and when they are about 7 to 10 years of age thinning out to 40 x 40 ft. should be carried out.

Flowering and Fruiting.

After about eighteen months, flowering and fruiting commence, though until about the third year the yields are small.

The flowers usually appear between January and February and the fruits can be collected from the end of February or early March up to the end of May. There are certain late season varieties known locally as cholagam because they only fruit from about June to July after the south-westerly wind has set in.

Varieties.

There are several varieties of cashew growing in Mannar which show such differences as reported in a previous article* by one of the writers, in the colour of the fruit (red, yellow or intermediate) its size and shape, as well as size and shape of the nuts and kernels, the season of bearing and the degree of shedding of flowers. From the commercial standpoint, the size and shape of the kernel as well as the percentage weight of the kernels are important

Varieties with large-sized nuts are not necessarily the best in quality. In the largest varieties examined, the kernels are found to be either flat or to fill incompletely the cavities of the shell while their percentage weight on extraction from the nuts is low. In general, the medium sized nuts averaging 50 to 60 per pound with a high percentage weight of kernels are the most desirable from the point of view of quality and yield. Selections of varieties for yield and for quality of the kernels which should be round, bold and hard as well as with a high percentage weight and of different seasons of bearing are under trial.

Yields.

In Mannar, the yields are reckoned on the number of nuts harvested and not on the weight as in India. The large nut varieties produce a

*The Cashew Nut Industry of South India, by W. R. C. Paul, *The Tropical Agriculturist*, September, 1936.

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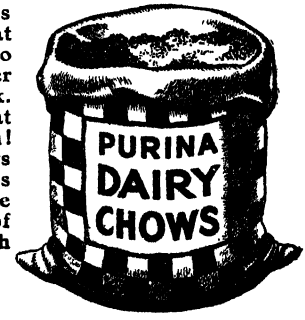
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lesser number of nuts per tree than do the small nut varieties but as the number of nuts per pound is proportionately less, there is generally not much difference between varieties in the weight of nuts per tree. Although accurate figures of yields are not kept by the owners of cashew trees, it is reported, in general, that the good large nut varieties produce about 4,000 nuts per tree, the medium varieties about 5,000 while the smallest varieties produce about 6,000 nuts or about 80 lbs. per tree in each case, the large giving about 50, the medium about 60 and the small about 80 nuts per pound. In South Kanara, the average yield is reported to be only about 20 lb. per tree, though there are individual trees which give as much as 100 lb.

Although the crop is purchased in Mannar on numbers of nuts and not on weight, it would not be advisable to plant the smaller nut varieties without considering the quality of the kernels as in the event of the development of the industry in Ceylon the purchase of nuts from growers is certain to be made on weight. In Mannar, however, a slightly higher price is paid for the varieties with larger nuts.

Extraction of the Kernels.

The method adopted in Mannar for roasting the nuts is simple and no vessels of any kind are even used. Three logs, usually of *Acacia planifrons* (T. *udai*) as being the most easily available in Mannar Island, each about 3 to 4 ft. in length and about 3 to 6 inches in diameter are placed on the ground so as to meet at a point with their other ends radiating from it. The surface sand within a radius of about 6 inches from this point is scraped away to a depth of not more than about ½ inch. The logs are lighted at their point of convergence and depending on the intensity of the fire, about 10 to 20 nuts are thrown at a time near the fire. With the aid of a small stick the nuts are moved about the surface sand so as to prevent their being charred, and when they are sufficiently roasted, are drawn away from the fire.

This work as well as that of shelling the roasted nuts and extracting the kernels, is carried out only by women who are skilled in these operations, and it is estimated that about 2,000 nuts can be roasted and shelled a day by a woman. It is necessary for greater uniformity in roasting and in the colour of the kernels produced that the process be carried out in open pans over small, circular, earthenware furnaces as is done in the cashew factories of South India.*

Shelling is carried out by striking the nuts on their edges once or twice in each case with a piece of wood.

Prices and Markets.

At present there is a ready market for cashew nuts and kernels from Mannar. These are sold at the religious festivals held during June and July at Madhu and at Anuradhapura. Jaffna, however, is a regular market throughout the year for Mannar cashew nuts.

Prices vary from about 90 cents to Re. 1.00 per 1,000 nuts, and from Re. 1.40 to Re. 1.80 per 1,000 kernels or about 6 cents per pound of nuts, and about 30 cents per pound of kernels.

Possibilities of Development.

The expansion of the cashew areas in Mannar Island is at present limited by finance. This is due to the cost of fencing and maintenance

*The Cashew Nut Industry of South India, by W. R. C. Paul, Ceylon Sessional Paper, (*in the press*).

of fences enclosing the cashew groves as well as of constructing small wells for watering the plants in the early stages.

The purchase of nuts and the extraction of the kernels is now being carried out as a cottage industry, but in view of the fact that there is an enormous demand for kernels extracted from roasted nuts in the U.S.A. and Europe, and in the event of a factory for the extraction, grading and packing of the kernels being established in Ceylon in the near future any extension in the planting of cashew nuts would be met by a suitable market.

Even before the establishment of a factory in Ceylon, the surplus nuts from such centres as Mannar and the coastal area of the Eastern Province could be disposed of in India to meet the requirements of the existing factories on the west coast. If nuts can be exported profitably from East Africa to the west coast of Ceylon there is no reason why Ceylon should not be able to do likewise.

* * *

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SEEDLING CASHEW PLANTS in Bamboo pots, grown at our nursery at "Ehren," Toll Gate. Price 1½d. per plant. A rebate of 1d. each will be made on all successfully established plants at the expiration of one year from the date of purchase.—JAMAICA AGRICULTURAL SOCIETY.

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Investigations have been made by the Entomological Division of the Department of Agriculture after consultation with the Advisory Committee on the banana and citrus industries concerning the possibilities of controlling the banana borer weevil by means of predatory insects.

The advice of the Imperial Entomological Institute and the Colonial Advisory Council of Agriculture and Animal Health was sought, and with the collaboration of these two bodies and the Departments of Agriculture in Malaya and Fiji, enquiries have been made concerning the possibilities of importing insects which would kill the banana borer weevil, but which would otherwise be quite harmless to Jamaican agriculture.

Careful enquiries have shown that the Java beetle, *Plaesius javanus*, feeds upon the larvae of the banana borer weevil, but is otherwise quite harmless, and arrangements have been made for nine consignments of this insect to be shipped from Fiji to Jamaica. The first shipment arrived on Saturday, August 14, having travelled to San Francisco by steamer, where the insects were examined and fed by an official of the Bureau of Entomology of the United States Department of Agriculture.

From San Francisco the insects travelled by air via Miami to Jamaica. They have been received by the Government Entomologist and released in a specially prepared observation plot in St. Andrew.

Other consignments of these insects will be received later and will be released in other districts.

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Many of these appear to be overlooked through lack of appreciation, or our inability to recognize their superiority over the artificially prepared substitutes.

Of late, no one hears much about "Chewstick," but whenever the name is mentioned, some remark like this usually follows: "Oh yes; it's a splendid thing for the teeth." A question immediately arises to be answered, and that is—why is it that instead of making better use of this natural means of cleansing and preserving our teeth, we invest sums of money, which we can hardly afford, on doubtful foreign preparations which cannot fulfil most of the claims advertised.

The Chewstick has been brought to the attention of the world in Vol. V. of Fawcett's "Flora of the West Indies" (Institute of Jamaica), where it is described in the following terms:

CHEWSTICK: CHAWSTICK.

"*Shrub* trailing over shrubs and trees to 20 ft. long, supported by the tendrils. *Leaves* 5-9 cm. l., ovate to elliptical, usually shortly and bluntly accuminate, base rounded or subcardate, crenate-serrate, serratures distant, often little developed, with or without minute glands, glabrous, glabrescent, or glabrate, nerves tapering towards the margin. *Inflorescence* pubescent, not tomentose. *Flowers* yellowish green. *Calyx* pubescent outside, 1.5-2 mm. l., lobes about 1 m. l. *Petals* as long as the calyx-lobes. *Capsule*: wings 8-9 mm. Seeds 2 5-3 mm. l.

This species is an agreeable bitter, used as a substitute for hops in ginger beer and cool drinks. The infusion has been used in cases of debility to restore the tone of the stomach. It has been recommended for dropsy. *In powder it forms an excellent dentrifice.* A tincture also is used as a wash in disease of the gums. Chewstick is also a substitute for the tooth-brush itself." (Macfayden).

No doubt, we will find that in a few years time, when the Banana begins to fail us, and we must of necessity, discover other assets to keep us going, the Chewstick will come into its place, but more in the nature of an export, as this sort of trade exchange appears to be the general practise—due to a very deep-rooted belief that what comes from abroad is superior to our own.

No efforts should be spared to stamp out this tendency among the younger generation, as every day, some new scientific fact comes to light showing that in most cases where man attempts to tamper with Nature some new hazard to health arises. Within the past few years there has been a steady outcry in the United States of America against the methods of certain advertisement agencies in misleading the public into purchasing certain goods advertised by them which cannot by any stretch of the imagination fulfil the claims made for them.

Tooth Pastes and Mouth Washes have come in for considerable attention from the Officials of the Foods and Drugs Administration Department and many manufacturers of Tooth Paste and Mouth Washes have been prosecuted for making misleading claims for their products. Here is the published report of one of many cases tried in the U.S.A. Courts, referring to the seizure and condemnation of 29,376 packages of Tooth Paste on March 16, 1936:

26491. Misbranding of McKesson's Milk of Magnesia Tooth Paste, U.S. vs. 2,448 dozen packages of McKesson's Milk of Magnesia Tooth Paste. Consent decree of condemnation. Product released under

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bond to be relabeled. (F. & D. No. 37373. Sample No. 46344-B.)

The labeling of this product bore false and fraudulent curative and therapeutic claims.

On March 16, 1936, the United States Attorney for the Northern District of California, acting upon a report by the Secretary of Agriculture, filed in the District Court a libel praying seizure and condemnation of 2,448 dozen packages of McKesson's Milk of Magnesia Tooth Paste at San Francisco, Calif., alleging that the article had been shipped in interstate commerce on or about March 7, 1936, by McKesson and Robbins, Inc., from Bridgeport, Conn., and charging misbranding in violation of the Food and Drugs Act as amended.

Analysis showed that the article consisted essentially of Calcium Carbonate, Magnesium Hydroxide, Borax, Glycerin, Talc, Soap, and water flavoured with peppermint and coloured pink.

The article was alleged to be misbranded in that the following statements contained in a circular shipped with the article, "Bleeding gums, the forerunner of the dreaded pyorrhea, known as Gingivitis and Vincent's Disease, commonly known as Trench Mouth, are distinctly benefited by its use," were statements regarding the curative or therapeutic effects of the article and were false and fraudulent.

On March 21, 1936, McKesson & Robbins, Inc., claimants, having admitted the allegations of the libel and having consented to the entry of a decree, judgment of condemnation was entered and it was ordered that the product be released under bond conditioned that the circulars be removed and destroyed.

M. L. WILSON,
Acting Secretary of Agriculture.

Most toothpastes are useless to preserve the teeth from decay, and their antiseptic qualities are very doubtful.

The presence of glycerine is known to be harmful to the gums. Soap is also very undesirable, and any quantity in excess of 5 per cent. is considered bad for the teeth. There is a well-known brand of toothpaste sold in Jamaica, which was found on analysis, to contain more than four times as much. The sharp and sweet tastes and odours of certain toothpastes do harm to the sense of taste, and will cause children to lose appreciation of certain foods and beverages.

One brand of toothpaste, which the writer himself has often used, contains a poison, and it is on record that a German Officer some years ago committed suicide by swallowing the contents of a tube of this particular brand.

It was, therefore, with much enthusiasm that the advice of an old acquaintance was taken to follow his example, and use the Chewstick. His method is simple, and works well, as it furnishes excellent exercise for the teeth, at the same time. He cuts up the Chewstick in small bits—about an inch long, and when teeth-cleaning time comes, he simply chews a bit, until a good foam develops. Then he discards the chewed material, gets hold of his tooth brush, and brushes his teeth thoroughly. After nine months' trial, we can safely assure readers that the results are simply marvellous. There is something in the Chewstick that cleanses the mouth easily and quickly, and there is the satisfaction that no harmful results may be feared from the action of chemicals on the teeth and gums.

A generous supply may be had for one penny, and lest anyone should argue that not much good may be expected from such a trifling outlay, we wish to add that it has been proven beyond contradiction that some brands of mouth-washes which sell at seventy-five cents in Drug Stores in the U.S.A., cost less than one cent per bottle to make.

It is suggested that an effective and safe mouth-wash can be made by adding ½ a teaspoonful of table salt to a tumbler of warm water.

Tooth-powders are to be preferred instead of pastes. Owing to harmful ingredients which constitute some tooth-powders, pumice stone for example, which wears down the enamel of the teeth, also soap, it is highly recommended to prepare one's own tooth-powder by mixing 1 lb. of the finest bolted precipitated chalk with 1 oz. of baking soda, flavoured with peppermint if desired.

One of the latest items of expenditure added to the long list of social services now being undertaken by our Government is Dental Examinations and treatment of school children, from which we learn that the condition of the teeth of our children reflect discredit on their parents.

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GOODYEAR

PINEAPPLE.

We publish the following letter from the Department of Agriculture on the subject of Pineapple Growing, which should undoubtedly be of interest to many of our members.

EDITOR.

Department of Science and Agriculture,
Hope, Kingston P.O.,
24th September, 1937.

Sir,

In view of the frequent references in the Press during the last two years to pineapple growing and the possibilities of establishing pineapple canning in Jamaica on a commercial basis, I would draw attention to a recent article by W. H. B. Johnson, Canning Officer, Malay States on "Recent Developments in the Malayan Pineapple Canning Industry." The article appeared in the July 1937 number of the Malayan Agricultural Journal which is, I believe, received by your Society. Among other interesting information contained in this article is an excellent graphical summary of the Malayan Pineapple Canning Industry from 1918 to 1936 which shows that exports have increased from about 4,000 tons in 1918 to about 75,000 tons in 1936. During that period the export prices have fluctuated considerably with a peak of 16 dollars (Malayan) per case of 48 tins of 1½ lb. capacity in 1920. Since that time prices have fallen steadily until in 1936 the average export price for the same unit was approximately 3.6 dollars (Malayan).

Since 1931 the average price has fluctuated between 3½ and 4 dollars. The Malayan dollar has a fixed sterling value of 2/4d. The 1936 export price therefore represents 8/6d. for 72 lb. of processed canned pineapple, or 1½d. per lb. including the value of fruit, processing, sugar, tins and crates.

2. As it is desirable that potential pineapple growers should have no illusions as to the possible value of fruit which they might produce, I should be glad if you would publish this letter in the next number of your Journal.

(Sgd.) F. E. V. SMITH,
Acting Director of Agriculture.

RETURN OF ARRESTS MADE BY AUTHORIZED PERSONS

QUARTER ENDING 30TH JUNE, 1937.

St. Thomas	2
Portland	6
St. Mary	29
St. Ann	7
Trelawny	5
St. James	7
Westmoreland	2
St. Elizabeth	3
Manchester	12
Clarendon	23
St. Catherine	9
Total	105

CONTROL OF VIRUS DISEASES OF POTATOES.

(Experimental Farms Note.)

Mosaic, leaf roll and spindle tuber are three important diseases of virus origin, commonly found affecting the potato. These diseases do not herald their presence by the production of rots or wiltings, and thus may easily be overlooked by the casual observer. Nevertheless, such diseases may reduce yields as much as 25 per cent. and they are now recognized as the disorders responsible for the "running out" or degeneration of potato varieties or strains.

Mosaic diseases are characterized by the mottling effects which they produce in the foliage. Leaf roll causes a slight general yellowing of the foliage and an upward rolling of the leaves. Spindle tuber intensifies the normal green colour of leaves, imparts an upright, staring appearance to the plant, and causes the production of spindly tubers with bulging eyes. The infective agents of these three diseases occur in all parts, including the tubers of diseased plants. These diseases are all infectious, and each can be transmitted to healthy plants by several methods, especially by insects and grafting.

The Dominion Laboratory of Plant Pathology at Fredericton, N.B., is engaged in an intensive study of potato virus diseases, with particular reference to their control. These investigations confirm the necessity of planting certified seed stock, the roguing out of diseased plants, the control of insects, especially aphides or plant lice, and the destruction of cultivated or weed hosts in which potato virus diseases are being harboured. Potato growers are urged to adopt the system of tuber-unit planting in isolated seed plots. Such plots should be rogued thoroughly, shortly after the plants emerge and the practice continued at weekly intervals throughout the growing season. If mosaic is eliminated from the seed source, aphid transmission of disease is greatly lessened. In roguing seed plots or large fields, remove aphid infested, virus infected plants as gently as possible. Rogued plants should be deposited in some type of closed container, carried from the field and then destroyed, preferably by burning. Do not pile rogued plants at the end of the potato field.

J. L. HOWATT, Asst. Plant Pathologist,
June 21, 1937. Fredricton, N.B.

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YELLOW YAM COMPETITION.

(Richmond Park Branch—1936-37.)

The Yellow Yam Competition in connection with the Richmond Park Branch was judged on the 15th April, 1937. This year's competition follows two very successful ones held in 1935 and 1936.

As a rule, the product from one hill of yellow yams is seldom very remarkable in weight; but last year, one hill with two medium sized heads produced 136 lbs.

This hill, one of ten, was produced by Mr Levi Morrison, and his fame went far and wide as a champion yellow yam producer, but even though his special hill was the heaviest producer in the competition, his Branch mate, Mr. Alex. Howe, got the highest aggregate weight of 923¾ lb. for 10 hills.

This year's competition found Mr. Alex. Howe champion of both highest individual hill and aggregate

His figures were: 163 lbs. for the highest single hill, and 1.248¾ lbs. for the aggregate for 10 hills with 2 heads.

To prove that these competitions are having the desired effect during the process of judging, hills of yams were dug in adjoining fields, and although these fields were not in the competition, the results were quite satisfactory.

Preparation and Planting.

For two or three months before, a cow was tied on the selected area, and grass and other fodder brought and placed at different sections all the time.

During that period the land was well manured with solid and liquid manures.

The 10 holes were dug 3x3x3, 8 to 10 feet apart. Mr Howe's ten hills actually took 3 men nearly a whole day to complete them. After they were made into mounds they were about 2 feet from the surface of the ground.

Two heads or plants of rather medium size were planted at fairly equal distances from both sides of the mound, and not deeply, so as to give each head ample space to bear.

After a day or two the hills were mulched with the debris left by the cow.

Very strong poles of hardwood, about 12-15 feet, were tightly driven down at the head of the hill, and generally two vines from these two heads were allowed to run on each pole.

Some Points of Note.

1. Yams should not be planted near each other as they, like other plants, require air and sunlight.

2. It is not necessary to plant very large heads. The very large ones do not of necessity give large bearing, and as a matter of fact, in the case of yellow yam, the large heads will give you very often a roundish yam known as "Pum pum."

A healthy medium sized head usually gives best results.

3. A large hill with manure placed at points where the roots can get at it early and continuously, will invariably give a large yam.

4. A strong pole or "stick," as it is called, preferably of hard wood

which can resist heavy wind, is best; as the more disturbance the yam gets the worse for results.

5. Mulching keeps in moisture and lessens the need for frequent weeding.

RESULTS.

Competitor's Name.	1st Hill.	2nd Hill.	3rd Hill.	4th Hill.	5th Hill.	6th Hill.	7th Hill.	8th Hill.	9th Hill.	10th Hill.	Totals.
											lbs.
1 Alexander Howe	128	86	114¾	163	116½	153	147¾	130¼	108¼	101¼	1,248¾
2 Levi Morrison	108¼	100	85	129¼	126½	101½	108	118¾	66	122½	1,065½
3 Albert Manning	100½	76	79½	116¾	94?	86	84½	125½	79½	75½	919½
4 E. M Denton	69	52	35	72	120	120	50				518
5 Nelson Pommells	37½	36½	47	41½	45	56	33	51½	36½		384½

(Sgd) A. L. VIRTUE,
Instructor.

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HORN-WORMS WHICH DEFOLIATE SWEET POTATO VINES.

By W. H. Edwards, D.I.C., F.R.E.S., *Government Entomologist.*

Lately an outbreak of caterpillars occurred in St. Catherine, when extensive fields of sweet potato were completely defoliated.

The insect concerned was a species of "Horn-worm" known as *Herse cingulata*. The caterpillars hatch from eggs laid on the foliage by a night flying hawk moth. Like all 'horn worms' they bear at the end of the abdomen a conspicuous tail-like projection; on account of their erect position these are commonly called horns.

The moths are of a general grey colour with pink markings on the body, which, in comparison with the narrowness of the wings appears heavily built. They measure about 4½ inches across the outspread wings.

The caterpillars vary so much in colour that growers are often led to believe that several species are concerned. Their general colouration varies from green to brown, black streaks run along the upper surface of the body, whilst conspicuous black spots are symetrically spaced along the sides.

When full grown, those caterpillars may measure as much as 3 ins. or more in length, being voratious feeders they individually destroy a great number of leaves in a short time. As they usually hatch out in great numbers it is not uncommon that where outbreaks occur, acres of plantation become defoliated within a day or two. The pest usually hatches out over restricted areas but gradually moves to new grounds, consuming all available food on their way, extensive damage thus occurs unless measures of control are rapidly applied.

Measures of Control.

Where outbreaks occur over restricted areas the pest can be partially controlled by hand-picking the worms. It is preferable to have the searches for the 'worms' conducted during the afternoon or morning, as during the hotter hours of the day a great number of them remain hidden in cracks that occur in clayey soils or under plant refuse where they seek shelter from the sun.

'Cling-cling' and other insectivorous birds which feed on those caterpillars should be protected. In gardens, etc., domestic birds can also be used to destroy the pest.

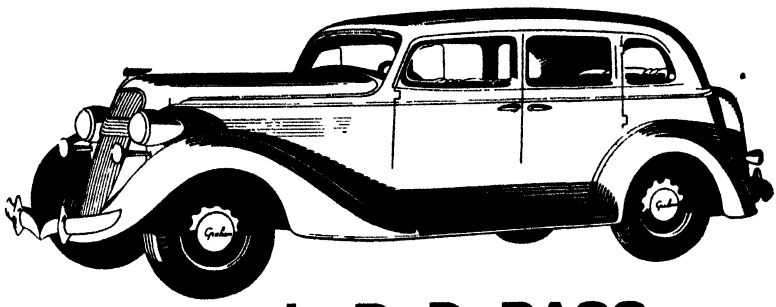
Cyolite, Sodium fluosilicate and other stomach poisons (see Journal of J.A.S. Vol. XL. No. 6 & 7), sprayed or dusted on the leaves of sweet potato give excellent results. Special attention should be given to apply the poison not only within the infested area but as a barrier in front of the line of advance taken by the caterpillars.

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BRANCH NOTES.

All Reports received are acknowledged in this section of the Journal. This month we have only been able to put in print Notes from Branches who have not yet had a publication for this year.

Branch Secretaries should **write on one side of the paper only.**

Ed.

PORTLAND Mahoe.—Meeting held 19.8.37. Among those present were Mr. J. Boyd, 2nd V.-P. Mr. J. O. Grant, Secretary and Instructor Wilmot. Meeting was called to order by Mr. J. Boyd, who asked the Secretary to offer prayer. The minutes of the last meeting were read and confirmed. Mr. D. Jackson, 1st V.P. sent an apology for absence. Matters arising from the minutes were discussed. There were five new members, making a total of 35 paid-up members. The Delegate gave his report of the Half-Yearly Meeting held in July. Mr. Boyd congratulated the Delegate on his report, and the House agreed. One Authorised Person gave his report. An address was given by the Instructor on the need of building up Holdings. He advised that the planting of staple crops, was necessary. The Instructor was thanked. There were 14 members present and 3 visitors. An enjoyable meeting was brought to its close by the singing of the National Anthem.

(Miss) SYBIL BAUGH,
Acting Secretary.

Bangor Ridge P.O.

ST. ANN : Sturge Town.—Meeting held 30th July. The President being unavoidably absent, the 1st Vice-President, Mr. Luther Ingram, was voted to the Chair. He called the meeting to order and prayer was offered by the Secretary. The Minutes of the last meeting were read and confirmed. Of business arising out of the Minutes the following were discussed : A grindstone which has been purchased by the Branch for the use of its members. The discussion turned on its usage; as to whether it should be free to members or not. After a short discussion it was decided that all members must pay half-price for sharpening their tools, and all non-members full-price. Any member found sharpening the tools of a non-member, forfeits the right of

sharpening his at half-price. Mr. L. A. S. Dawes was asked to give his report as delegate to the Half-Yearly Meeting of the J.A.S. in Kingston, which he did to the satisfaction of all. He also put before the meeting hints he had obtained from the Summer Course at the Government Farm School at Hope, where he had stayed for a week; touching on several branches, dealing especially with the Headmaster, Mr. J. W. Howe's lecture, "The Place for Small Stock." A hearty vote of thanks was accorded the delegate. Mr. Dawes thanked the meeting for their kind expressions. It was reported to the meeting that the new road across Knapdale was in progress of construction and would, in a short time, be connected to the main road at Philadelphia. The roll-call showed 13 members present. The Authorised Persons reported "All Correct." The meeting was brought to a close with singing of the National Anthem.

L. A. S. DAWES,
Sturge Town P.O. Secretary.

ST. ANDREW : Rock Hall.—Meeting held 16.8.37. A hymn was sung, after which prayer was offered by the Secretary. The Chair was occupied by Mr. Moses Letchmore. The minutes of the last meeting were read and confirmed, and matters arising therefrom dealt with. 8 members were present. A letter from the Acting Secretary re Land Settlement Scheme was dealt with. Journals were then distributed. The Doxology brought an enjoyable meeting to its close.

(MRS.) B. HESLOP,
Red Hills P.O. Secretary.

ST. CATHERINE : Bowers Wood.—Meeting held 12th August. Present : Mr. Byles, Agricultural Instructor, Agricultural Foreman Francis, sixteen members and one visitor. Meeting was presided over by Mr. Edward Willis, 1st V.-P. Report from Delegate to the Half-Yearly Meeting in Kingston was read and adopted. A vote of thanks was tendered to him. A warm and stirring address was delivered by Mr. Ambrose Leecesne, a staunch member of the Branch. His address was punctuated by stories and anecdotes. A vote of thanks was moved, to which he suitably replied. The Instructor lectured on Banana and Citrus culture. He explained how the borer attacks the Banana, and told how to get rid of 'slugs.' He stressed the need of proper trenching, forking, pruning, selecting, and mulching. The Instructor and Mr. Lecense organized a "Free Labour Committee" to assist in cutting the new road. Authorized Persons reported two arrests and convictions for 'unlawful possession.' The Managing Committee reported. Two new members were enrolled. An enjoyable meeting was held which terminated with the singing of the National Anthem.

PETER E. J. DAVIS,
Bog Walk P.O. Secretary.

Wakefield.—Meeting held 10th August. Present were : Mr. Nathaniel Duffus, 1st V.-P., in the Chair; 4 other officers and 8 members of the Branch. After the opening of the meeting, the members decided that a resolution be sent to the Parent Body, asking the members of the P.B. from this area to visit the district and see the conditions thereof for want of proper road facilities. After other matters of importance were dealt with, the singing of the National Anthem brought the meeting to a close.

L. A. FERGUSON,
Linstead P.O. Secretary.

ST. ELIZABETH : Malvern.—Meeting held 30.7.37. There were present : Rev. S. C. Ashton, President, Instructor Lynch, 14 members and 2 visitors. After the reading and confirmation of the minutes, the Instructor made reference to the forthcoming Show to be held at Nain, and encouraged members to co-operate. Specimens of Irish potatoes grown in the Bethlehem school garden, were exhibited. The Instructor spoke commendably on the production, and advised members of the Branch to experiment on potato-growing. He then gave hints on Potato Culture, dealing particularly with Preparation of Soil, Time for planting, Selection of Seed, and Treatment of the crop. The Instructor also spoke on Corn Growing. Judging of exhibits

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for the Corn Competition, which had been arranged for the meeting, next proceeded, and resulted as follows :—1st Prize, Mrs. E. J. Seal; 2nd, Mr. T. M. Fagan, 3rd, Miss E. I. Blake. A discussion on the possibility of a Vegetable Association took place, and the meeting terminated with the singing of the National Anthem.

(Miss) E. I. BLAKE,
Malvern P.O. Secretary.

Upper Pedro Plains.—Meeting held 13th August. Tomato growing for export was discussed. Among those present were : Major Moxsy, Messrs. H. W. Lynch (Agricultural Instructor), C. A. Blythe, of Bull Savannah, B. A. Henry (President), J. W. Maxwell, of Nain, I. S. Millard, Secretary and Treasurer. The meeting opened with prayer by Rev. W. S. Smith. Instructor Lynch spoke on the keeping of animals to provide manure for vegetable growing. He encouraged vegetable growing, from the economic and dietetic points of view. He received the thanks of the meeting for his address. Major Moxsy and Mr C. A. Blythe, who were heartily welcomed, spoke on Tomato growing for export. Major Moxsy told agriculturists all the set-backs in Tomato growing, but encouraged them to work hard and help themselves to ensure as good results in Pedro Plains as there had been in Bull Savannah. Mr. Blythe gave hints on Tomato culture and, as Major Moxsy had done, he promised every assistance he could give to make vegetable growing a success in Pedro Plains. Major Moxsy and Mr. Blythe were heartily thanked for their addresses, and answered many questions on Tomato growing. After minor matters were discussed, the meeting terminated with the singing of the National Anthem.

I. S. MILLARD,
Pedro Plains P.O. Secretary.

ST. MARY : Mt. Joseph.—Meeting held July 30. The 1st V.-P., Mr. Francis Edwards, presided and welcomed 41 members, Instructor Jones, and the 8 visitors present. After the confirmation of the minutes, matters arising therefrom were taken : (a) Letter to the M.O.H. re Pollution of springs used for water supply; (b) the importance of payment of taxes. A full and interesting report of the Half-Yearly meeting held at Highgate on June 26, was given by one of the delegates and three other members who attended. Instructor Jones then stressed the importance of attending the Courses held at Hope. He next addressed the meeting on "Nutrition," and the importance of eating what we produce, and producing what we eat. Thanks

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was conveyed to him by the Secretary. Mr. J. Anderson, of Mt. Cressy, a retired Bank Supervisor of Canada, addressed the meeting on the formation of a Savings Bank for the Society, and was thanked by the President. Mr. R. Gillies, of Langley, Mt. James, gave an address on Co-operation. The Instructor thanked him. An appeal by the Secretary brought three new members, and he announced that the membership of the Branch is now 94. A loud cheer was given. The singing of "The King" closed the meeting.

E. V. WEBBER,
Enfield P.O. Secretary.

Free Hill.—Meeting held 26.8.37. Present were: Mr. J. W. Brown, President, Mr. N. B. Falconer, Secretary, and 10 members. Prayer was offered by Mr. R. E. Anderson. Minutes read and matters therefrom dealt with. The Secretary was instructed to convey congratulations to Mr. C. L. A. Stuart on his election to the Board of Management of the J.A.S., and to write to the Parochial Board expressing thanks for replacement of a standpipe in the district. A lengthy discussion on the water supply ensued as the result of a letter from the Parochial Board on the matter. The Secretary was instructed to write again to the Board and to ask that at least a two-hour supply of water be given to the district daily. The necessity for a Ticket Distributor in the District was discussed, and the Secretary was given instructions to take up the matter with the Parochial Board. "Cocoa" came up for discussion, but lent little interest, and the discussion turned to "Tobacco," in which members are very keenly interested. The Secretary undertook to get expert advice on Tobacco growing for the next meeting. The Secretary spoke briefly on the growing of Vegetables, and referred to what was being done in other parts of the Island. Several members decided to grow vegetables for home consumption. The National Anthem was sung and the meeting adjourned.

N. B. FALCONER,
Free Hill P.O. Secretary.

Belfield.—Meeting held 23.8.37. Present Mr. G. A. Campbell, 1st V.P., 23 members and 2 visitors. The proposed debate, "Resolved that the cultivation of tobacco is more profitable to the small settler than the cultivation of pine-apple," was postponed for the September meeting. Five A.Ps. present. A.P. Livingstone reported one arrest and one attempt. The other four reported "all correct." The Society proposed having a Vegetable Show in March and a Rally among the members before, so as to raise funds for prizes in the Show. The Report of the Half-Yearly meeting of the St. Mary Branches Associated was read by Mr. H. Clarke, delegate. Three new members enrolled. It was decided to hold a big meeting on 16th September for the purpose of sending up a petition re two very bad curves on the Main Road in the district. A special committee was appointed to arrange for the meeting. Minor matters were discussed and the meeting adjourned with the singing of "The King."

(Miss) M. L. RENNALLS,
Belfield P.O. Secretary.

ST. THOMAS: Somerset, Trinity Ville.—Meeting held August 19. Present: Messrs. D. N. Hinds, President, Instructor McLaren, F. A. Telfer, M.P.B., Treasurer, and G. O. Graham, Secretary. The President called the meeting to order and extended a welcome to the Instructor. Mr. Telfer told of the efforts to keep the Branch alive and now reported the affiliation of the Branch. He stressed the importance of the members attending meetings. He also reminded the members of the good work the Branch had accomplished, which could be seen by the improvements

in the District. Mr. L. Jackson was enrolled as a new member. He asked the members to recollect the efforts of the Branch when Mr. Telfer was Secretary. The Instructor spoke on Afforestation. The meeting terminated with the singing of the National Anthem.

GLADSTONE S. GRAHAM,
Trinity Ville P.O. Secretary.

Pear Tree River.—Meeting held 3rd May. Present: Mrs. E. Beckford, President, nine other members and a few visitors. The minutes of the previous meeting were read and confirmed. Matters arising therefrom were discussed. The matter of an Agricultural Harvest Offering and Market Fair was dealt with, and an appointment of a committee was deferred until next meeting. The House was delighted with a Recitation by Master J. Edwards. Minor matters were dealt with after which the Roll Call was taken and the singing of "The King" terminated the meeting.

V. RALPH MCLEAN,
Port Morant P.O. Secretary.

Dalvey.—Meeting held 21.8.37. There were present: Instructor McLaren, the Officers of the Branch and 20 other persons, including members and their friends. Mr. McLaren spent the day in the district visiting and demonstrating on several holdings. He was accompanied by Mr. S. E. Bryan and others. After the usual preliminaries Mr. McLaren spoke to the gathering. His subject was "Lime Industry." He said it was an excellent crop for the small people and a source of revenue. He encouraged the members to support the Society which aims at the advancement of the community. A vote of thanks was accorded him, the National Anthem was sung and the meeting ended.

J. A. MCPHERSON,
Dalvey P.O. Assistant Secretary.

TRELAWNY: Ulster Spring.—Meeting held 9th August. Instructor Thompson was present, also Rev. J. A. Edwards, who presided, 8 members, the Secretary and a large number of visitors. The meeting was opened with prayer. Minutes were read and confirmed and matters arising therefrom discussed. Correspondence was taken. The letters called for long discussions which were carried on for a lengthy period. Special welcome was warmly given the visitors by the Instructor, President, and members. Instructor Jones, a visitor, replied for the visitors. Authorized Persons present gave reports. The Instructor gave helpful suggestions throughout the meeting. The agenda was arranged for the next meeting, and the meeting adjourned after the singing of the National Anthem.

(MISS) I. C. WILLIAMS,
Ulster Spring P.O. Secretary.

WESTMORELAND: Cairn Curran.—Meeting held 13.8.37. Present were: Mr. E. W. Prout, President, 13 members, 3 visitors, and Instructor Kelly. The meeting was opened with prayer. Minutes were read and confirmed. Delegates gave favourable report of a road deviation and water supply, which was the outcome of a deputation accepted by the Parochial Board. Instructor Kelly gave a synopsis of the Half-Yearly meeting, also an address on Panama Disease, and discussed the Food value of banana. A few pages of the June Journal were discussed. The meeting closed with the singing of the National Anthem.

(MISS) P. A. HEMMING,
Darliston P.O. Secretary.

Kentucky.—Meeting held 2nd July. Present: Mr. Levi McKenzie, President; seven members and six visitors. The meeting was opened with prayer, and the President made his opening remarks expressing regret at his inability to attend recent meetings and expressed satisfaction with the success of the meetings. The minutes having been read and confirmed, correspondence was next taken. An apology for absence from the Instructor was read. Matters arising out of the minutes: (a) the Secretary reported that he had received no communication from the W.B.A. with reference to the resolutions sent to the Half-Yearly meeting; (b) the matter of an Experimental Plot for the demonstration of a suitable crop that will subsidize the present failing pimento crop was again discussed. It was decided to sell the Ram Goat at its market value. The Secretary was instructed to procure seeds for sale to members. Authorized Persons reported "all correct." Domestic matters were dealt with, the Roll Call taken and the meeting terminated with the singing of the National Anthem.

A. M. RANKINE,
Cave P.O. Secretary.

Bethel Town.—Meeting held 21.8.37. There was a large attendance. Mr. P. Johnson presided. Minutes were read and adopted. House for boar is being constructed Estimate for corn was given by members for corn contract which this Branch has been carrying on for some time. Members were urged to pay their fees to the Society in due time, and show interest by attending the meetings regularly and punctually. An outing during September to the Government Farm at Grove Place was planned. Several members promised to make the trip. The need of another J.P. was stressed by the meeting, and after discussing the matter, the meeting nominated the Rev. S. H. Helwig as a fit and proper person for such an appointment. The meeting was informed of the promotion of Instructor Mair, but while it rejoices at the recognition, it regrets the loss of this capable young Instructor. Minor matters were dealt with and the meeting terminated with the singing of "The King."

L. G. BALDIE
Secretary.

Bethel Town P.O.

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OTHER REPORTS RECEIVED.

Branch and Secretary.	Date of Meeting.	Attendance.	Business.
Clarendon			
Rock (H. D. Thomas)	28 7 37	23	Report of delegate to Half-yearly meeting. Fertilizers. Post Office.
Sunbury (Narreld Knight)	10.8 37	28	Road. Address by Instructor J. A. Graham. Fertilizers.
Manchester.			
Mizpah (U. C Wolfe)	9 8 37	10	Ram. Demonstration Plot. Report of A. P.
Portland.			
Maidstone-Bourbon (I. E. Somers)	11 8 37	19	Address by President. Correspondence.
St. Catherine.			
Bellas Gate (A. A. McCurdy)	9 8.37	Over 15	Ram. Report of A.P. Address by Instructor Byles.
St. Elizabeth.			
Fyffes' Pen (L. H. E. Reid)	12 8 37	19	Soil erosion. Brompton Water supply scheme. Road.
St. Mary.			
Baxters' Mtn. (R. J. Lawson Ricketts)	17.8 37	9	Shed for market animals. Correspondence. Reports of A.Ps.
Epsom (Fred. A. Edwards)	4 8 37	41	Water supply. Report of delegate to Half-yearly Meeting. Picnic.
Richmond (S. A. Officer)	27.8 37	26	Ram. Address by Instructor Coke. Report of delegate to Half-yearly Meeting.
St. Thomas.			
Golden Grove (David Dixon)	18.8 37	21	Address by Instructor McLaren. Hampton Court water supply. Correspondence. Report of delegate to Half-yearly Meeting. Election of officers.
Trelawny.			
Duncans (L. V Sloley)	17 8 37	Over 10	Road. Address by Instructor Robotham on Minor Industries. Lamp. Address by Mr. Stockhausen.
Westmoreland:			
Porter's Mtn. (D. F. Bowen)	16.8 37	24	Fertilizers. Social. Report of A.Ps. Debate. Road.
Petersfield (J. T. McBean)	4 8 37	Over 22	Cane Mill. Sale of Corn. Debate. Report of A.Ps.

When corresponding with Advertisers, mention the Journal of the

JAMAICA AGRICULTURAL SOCIETY.

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GUERNSEY:
Hope Foremost 5th.

MONTGOMERY-GUERNSEY:
Cortes.

MONTGOMERY-BROWN SWISS:
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FEE. 10/- per Cow, with one month's free pasturage—after that 4/- per month.

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FEE. £1 per mare. Pasturage conditions as for the Stallion.

All Service Fees are payable in advance. Animals must be free from contagious and other diseases, and be clean of ticks.

For all particulars apply to:—

The Superintendent,
Grove Place, Mile Gully.

Jamaica Agricultural Society.

LIST OF CURRENT PRICES—SEPTEMBER, 1937.

All orders must be fully prepaid, *as we do not carry accounts.*

	Bushel	Quart	Packet
GREEN DRESSINGS			
Overlook Beans	12/-	5d.	..
Jerusalem Peas ..	24/-	10d.	..
SEEDS:			
Seed Corn .	12/-	5d.	.
Red Peas ..	22/-	9d.	.
Cow Peas ..	12/-	5d	..
Black Eye Peas ..	18/-	9d	
No Eye Peas ..	16/-	7d.	..
GRASS SEEDS:	100lbs.	1 lb	..
Guinea Grass ..	50/	6d.	..
Wynne Grass ..	..	1/3	..
VEGETABLE SEEDS:	Packet	12 Pkts.	Oz.
All varieties ..	3d.	2/6	..
TOBACCO SEEDS:			
Virginia (imported)	3d.	2/6	4/-
Havana " ..	3d.	2/6	4/-
Virginia (native) ..	3d.	2/6	2/6
	Brl. at Office.	Brl. Shipped.	5 lbs.
SEED POTATOES ..	20/-	22/-	1/-
FEEDS.	100 lbs	1 lb.	Bag.
Coconut Meal	6/-	1d.	
Dairy Feed ..	8/-	1d.	
Calf Meal	.	3d.	20/-
Mixed Poultry Grain	11/6	1½d.	
Laying Mash .	18/-	2½d.	5 lbs-1/
Growing Mash .	17/6	2½d.	"
Baby Chick Feed ..	20/-	3d.	
Chick Grain .	17/6	2½d.	"
Meat Meal .	20/-	3d.	
Bone Meal .	18/-	2½d.	
Butter Milk ..	25/-	3½d.	
Fish Meal ..	24/-	3½d.	

	Pckt. or Bottle	Oz.	Each.
STOCK MEDICINES			
Poultry Tonic (TAVARES)	6d.	..	
Liniment ..	6d.	..	
Healing Oil ..	6d.	..	
Healing Salve ..	1/-	..	
Healing Powder ..	1/-	..	
J.A.S. Poultry Lice Powder ..	..	3d.	
Cattle Condition Powder .	1/-	..	
Kamala Nicotine Caps ..	2/-	..	½d
Nema Worm Capsules .	..	..	4d. & 6d.
Chicklivia ..	5/-	..	6d. for 10
Thymol Powder ..	6d.	..	
Karswood poultry Spice .	1/6 per lb.		

All prices subject to change.

	Pckt. or Bottle.	Oz.	Each.
STOCK MEDICINES, *contd.*			
Poultry Leg bands	7/6 in 100 lots		1d.
Spiralets ..	4/- per 100		½d.
FERTILIZERS:	100 lbs.	1 lb.	
Calcium Cyanamid	10/-	1½d.	
Sulphate of Ammonia	10/	1½d.	
Sulphate of Potash	12/6	2d.	
Ammophos ..	12/6	2d.	
Nicifos—2 ..	12/6	2d.	
Muriate of Potash	16/-	2d.	
Nitrate of Soda ..	10/	1½d.	
Superphosphate ..	6/-	1d.	
Adco. ..	20/-	3d.	
MIXTURES:			
4.10.12. ..	10/-	1½d.	
12 5.3. ..	10/-	1½d.	
10.10.12. ..	10/-	1½d.	
7.10.12 ..	10/-	1½d.	
N.B. Prices are subject to change without Notice.			

	Quart	lb.	Packg.
INSECTICIDES & FUNGICIDES:			
Paranaph	..	4d.	..
Bluestone ..	..	6d.	..
*Nicotine Sulphate 40% ..	..	7/6	.
*Emulso ..	1/3	5/- gal.	
Whale oil soap .	..	7d.	..
Sulphur Lime .	..	6d.	..
Rat Poison ..	.	3/6	.
Bordinette .	.	1/3	
Rock Ammonia .	..	2/-	..
Paris Green ..	..	1/6	..
Arsenate of Lead ..	.	1/-	.
Para-dichloro benzene ..	.	1/6	..
Cyanogas ..	.	2/9 tin	
Ant Killer .		2/- tin	
Ostico .		2/6 tin	
Cut worm Killer	.	1/6	
Pyrethrum mixture	1/6	..	..
Folio fume ..	.	6d.	oz.
Soilex for testing soil	.	..	..

*Customers provide containers.

MACHINERY.	Each.
Estrella Coffee Pulper	£10 0 0
Mtoto Coffee Pulper	£3 17 6
"Solo" Spray (Complete)	£1 5 0
Fly Trap (House)	4 6
Fly Trap (Fruit)	4 0

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THE JOURNAL

OF THE

Jamaica Agricultural Society.

The more people do the more they can do; he who does nothing renders himself incapable of doing anything; while we are executing one work we are preparing ourselves for undertaking another

Vol. XLI. OCTOBER & NOVEMBER, 1937. Nos. 10 & 11.

BOARD OF MANAGEMENT.

The regular monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the offices of the Society, 10-12 North Parade, Kingston, on Wednesday the 1st September, 1937, at 11.30 a.m. There were present: Hon. Geo. Seymour Seymour, O.B.E., First Vice-President, in the Chair, Mr. U. Theo. McKay, Third Vice-President, Mr. F. E. V. Smith, Acting Director of Agriculture, (*ex officio*), Messrs. C. O. Cover, T. P. V. McDaniel, D. D. Phillips, C. L. A. Stuart, and W. Harper Watson; Messrs. A. P. Hanson, Supervisor of Instructors, P. St. L. Bacque, Acting Secretary, Arthur Thelwell, the newly appointed Secretary, who attended, although he had not yet taken up his duties.

The Hon. C. A. Reid attended during the course of the meeting.

Apologies for Absence.

Apology for absence was submitted on behalf of Rev. W. J. Thompson.

Confirmation of Minutes of the Previous Meeting.

A copy of the minutes of the previous meeting having been circulated these were taken as read, and confirmed.

Death of Mr. Cradwick.

The Chairman referred to the death of Mr. W. Cradwick who was closely associated with the agricultural activities of the Colony for a number of years, and was at one time an Agricultural Instructor. Regret was expressed at his death, tribute paid to his work, and a resolution of condolence to be forwarded to the wife of the deceased, was passed. The Board stood in silence.

Matters Arising out of the Previous Meeting.

(a) *Letter from C.S.O. re secondment of Mr. Thelwell as Secretary of the Society.* The following was submitted:—

24th August, 1937.

Nos. 4281/37.

"With reference to your letter No. 36 of the 12th August, 1937, I am directed to inform you that the Government has approved of Mr. A. F. Thelwell, Agricultural Superintendent of the Grove Place Stud Farm and Experimental Station, being

seconded for duty as Secretary of the Jamaica Agricultural Society for a period of two years as from the 16th September, 1937, (the first year of which period will be on probation), with salary in the scale of £500 per annum rising by annual increments of £25 to £600 per annum, plus a personal allowance of £150 per annum, on the understanding that his pension rights as a Government Officer and based on the salary of his substantive office are safeguarded during the period of his secondment.

2. It is regretted that Mr. Thelwell's services cannot be made available before the 16th September, 1937, but arrangements will be made for him to attend the meetings of the Board of Management and the Committee meetings of your Society which take place at the beginning of September.

(Sgd.) J. D. LUCIE-SMITH,
for Acting Colonial Secretary.

The Acting Director of Agriculture said that it might be necessary in order to safeguard Mr. Thelwell's pension rights for his salary to be paid by the Society through the Department of Science and Agriculture.

The concensus of opinion was, however, that in the face of the letter from the Government the matter did not arise.

Satisfaction was expressed that the Government agreed to the request of the Board in this regard, and a hearty welcome extended to Mr. Thelwell.

He thanked the Board.

(b) *All-Island Exhibition.* The Chairman expressed regret that since the last meeting of the Board he had not been able to do anything in this matter.

(c) *Outstanding Accounts*: List of Debtors, etc. A list of outstanding accounts showing a total of £727 was presented. After discussion, certain specific instructions were issued regarding the collections.

(d) *Report re Wakefield Branch (Penny Bank).* This report dealt with the financial affairs of the Wakefield Branch in Trelawny and also with the funds of the Penny Bank run in connection with the Branch.

The Board considered the whole position most unsatisfactorily, and the Secretary was directed to make certain further investigations regarding the matter. He was also instructed to direct the Agricultural Instructors to see that Rule 12 of the General Rules Relating to the Branches of the Society should be very strictly observed.

(e) *Report re Transfer of Porter's Mtn. Branch from Instructor Hastings to Instructor Kelly.* It was stated this matter had been dealt with by the Instructors' Committee and would be duly reported on.

Demonstration Plots. Mr. Stuart asked if a reply had been received from Government regarding the funds voted for Demonstration plots, and received a reply in the negative.

Matters left over from the Previous Meeting.

(a) *New Members.* The following were elected to the membership of the Society.

Rev. Canon L. A. Lennon, Nigeria.
The West Indies Co., Ltd., 1628 Marine Bldgs., Vancouver, Canada.
Surinaamache Bananen My Shoftsted Crullaan, Paramaribo, Dutch Guiana.
Walter James, Retreat, Above Rocks.
J. McNeil Smith, Collector of Taxes, Port Antonio.
Capt. H. Dare, "Kaiora," Mandeville.

Other Business.

(a) *Application from Mr. Cawley for two months leave* from 1st September, was submitted and the leave granted.

(b) *Application from Mr. Bacquie for two weeks sick leave* as from the 4th August, was submitted for record.

(c) *Resignation from Mr. Wint* was submitted. This was accepted with regret.

(d) *Letter from Clarendon Branches Associated Show Committee* dated 2nd August, 1937, was submitted requesting that a meeting of the Shows Committee be held to go into the matter of the plans and estimates for the erection of the Buildings on the newly acquired Show Grounds at May Pen.

It was decided that the Show Committee should be advised that no action could be taken in the matter until a decision had been arrived at as to where the All-Island Exhibition now under consideration should be held.

(e) *Report on Yellow Yam Competition—Richmond Park Branch* This report was forwarded by Instructor Virtue.

The Secretary was directed to publish it in the Journal.

(f) *Resolution from St. Thomas Branches Associated re control of Malaria.* The Secretary was directed to forward this resolution to the Director of Medical Services.

(g) *Resolution from Hampshire Branch re Water Supply.* The Secretary was directed to refer this resolution to the Parochial Board of St. Catherine.

(h) *Resolution from Hampshire Branch asking for increased Police Protection* was directed for reference to the Inspector General of Police.

Statement of Accounts.

(a) *Statement for July.* The Secretary said this was submitted at the previous meeting.

(b) *Statement for August was submitted.*

Questions.

Mr. Phillips submitted the following:—"What is the cost per bushel of the manufacture of cornmeal from locally grown corn?"

Resolutions.

(a) *Mr. McKay—Investigation re preservation of Mangoes.* The following was read:—

"That whereas a large quantity of our mangoes goes to waste every year: Resolved that the Department of Science and Agriculture be asked to conduct such investigations which may result in the preservation of this article of food and prevent the waste that now takes place."

Mr. McKay spoke on the resolution and mentioned mango chutney. He said he did not know if the manufacture of that article could be extended.

Mr. Cover seconded the resolution.

The Acting Director of Agriculture enquired if the resolution referred to the preservation of mangoes for local use or for export.

Mr. McKay replied that both avenues could be explored. The object was to rescue the waste of the fruit.

The resolution was carried.

(b) *Mr. McKay re Marketing of Vegetables locally.* The following was read:—

"Resolved that a Committee consisting of Hon. G. Seymour-Seymour, O.B.E., Messrs. D. D. Phillips, T. P. V. McDaniel, T. J. Cawley and U. Theo. McKay be appointed to explore the possibility of marketing locally vegetables: that Mr. U. Theo. McKay be Chairman of the Committee: three to form a quorum. That the Supervisors and an Agricultural Instructor be asked to attend the meeting or meetings and help in the work so as to make the venture a success."

Mr. McKay said they were aware that the Department of Science and Agriculture had embarked on the marketing of vegetables abroad, which entailed careful selection. His proposition was for the marketing of all that could not not exported. At the present time there were many hotels and lodging houses which imported vegetables because they could not obtain the necessary supply throughout the year from the local markets. The dry areas of St. Elizabeth were quite suitable for the growing of tomatoes, and much could be done for such districts. He outlined a scheme by which the project could be pursued.

Mr. Phillips, in seconding the motion, said he was of opinion that Jamaica could supply her entire demand for vegetables.

The Acting Director of Agriculture said the question of the marketing of vegetables had been under consideration by his Department for over two and a half years. The proposals made by Mr. McKay forestalled certain proposals he intended to submit to the Instructors Committee. From experience he knew that the question bristled with difficulties.

After discussion the resolution was passed and the name of the Marketing Officer, the present Acting Director of Agriculture was added to the personnel of the Committee. Later in the afternoon the name of the Hon. C. A. Reid was also added.

At the request of Mr. Reid the following item was considered:—

Letter from C.S.O. re Corn Industry. The following was read:—

No. 4222/37.

26th August, 1937.

"I am directed to inform you that the Government will be glad if your Society will consider what steps can be taken to encourage the use of locally grown corn, ground or otherwise, as an article of diet among the labouring classes and other persons, without the necessity of establishing expensive machinery for a corn meal industry.

2. Government will be glad to receive a report from your Society in the matter."

(Sgd.) F. C. H. WILSON,
for Acting Colonial Secretary.

Mr. Reid said that with the expectation of a market through a reported proposed corn meal factory, farmers in Manchester and St. Elizabeth had produced a considerable amount of corn and were now unable to find an outlet, as the factory had not materialised.

The Chairman pointed out that the Society's hands were tied owing to lack of storage space, most of which was utilized for the storing of Bordeaux Mixture, the property of Government. With storage space they might be able to distribute the surplus from corn-producing districts.

Mr. McDaniel said he should like to know if anything had been done to help in the erecting of the cornmeal factory.

The questions of the use of corn for stock feed, as ration in Government Institutions, and the matter of better distribution of the surplus to districts which had no corn, were also discussed.

The meeting adjourned for luncheon.

On the resumption there were present: Mr. Seymour, in the Chair, Messrs. Reid, McDaniel, McKay, Watson and Phillips; Mr. Hanson, Supervisor, Mr. Thelwell and P. St. L. Bacquie, Acting Secretary. Later, Messrs. Cover and Stuart attended.

Further discussion on the corn industry took place and it was decided that the matter be referred to the Committee appointed earlier in the day to deal with marketing of vegetables.

It was also decided that Mr. Reid should be a member of that Committee.

The Secretary was directed to call a meeting of the Committee on the 23rd September.

Reports from Committees.

(a) *Report from Special Meeting of Instructors Committee.* The following report was presented and tabled:—

To the Board of Management:
Gentlemen:

Your Instructors' Committee met this morning and beg to report decisions have been arrived at as follows:—

1. That the matter of the transfer of the Porter's Mountain Branch be deferred for consideration until such time as the Branches in the several Instructors districts are being re-adjusted.

2. That Instructor Darby assist by frequent visits to New Forest in connection with the development of tobacco experiments there by the Tobacco Specialist, pay Pay Bills, etc., and that if from experience it is found necessary, consideration be given for extra travelling.

3. That on the report of the Sub-Committee the Charlton Demonstration Plot be accepted and that Instructor Miller be instructed to proceed with a survey of the soil and prepare a plan and schedule of his proposals as to lay-out, crops and estimated cost as soon as possible.

4. That with reference to the vacancy in St. James, the district be taken over for the present by neighbouring Instructors; that the Secretary and Supervisor confer with the Chairman of the Instructors' Committee and the First Vice-President with a view to putting the arrangements into effect as soon as possible, and to make arrangements for such extra remuneration as they think fit.

5. That Headman Harris be given four weeks sick leave and two weeks' salary.

6. That Foreman Francis be asked to furnish a Medical Certificate within two weeks.

7. That Instructor Lynch be advised that the Department of Agriculture is placing a special officer in the South St. Elizabeth District in connection with the vegetable development work there.

8. That with reference to Instructor Byles' application for citrus budwood, he await the distribution of budwood from Hope in October.

9. That Mr. Griffith's request re budding of mango trees be investigated and reported upon by the Supervisor.

10. That leave be granted to Inspector Kelly for the month of October as per Schedule; that Instructor Wray be granted two weeks' leave in September, and that Instructor McLaren be permitted to take his leave in November instead of in September, as shown on the Schedule.

(Sgd.) F. E. V. SMITH,
Chairman.
(Sgd.) P. ST. L. BACQUIE,
Acting Secretary.

1.9.1937.

Diseases of Plants and Animals: Insect Pests.

(a) *Panama Diseases of Bananas—Reports for May and June*, 1937. The Secretary said copies of these reports had been issued to individual members of the Board.

Mr. McKay brought to the attention of the Board that he was not satisfied with the manner in which Panama Disease was being treated in his section. He said some farmers obtained the oil provided for treatment and neglected to use it. He hoped the Acting Director of Science

and Agriculture would review the situation and see that the treatment was done not by the farmers but by the Inspectors of Plant Diseases.

Mr. McDaniel said that in the areas around St. Catherine, the treatment of the disease was being continued very satisfactorily.

The Acting Director of Agriculture said it was not practicable for the Inspectors of Plant Diseases to treat every plant affected by the Disease, but he would look into the complaint made by Mr. McKay.

Communications.

(a) *Letter from C. A. Crearer re account for commission for Advertisements.* Mr. Crearer submitted a claim for £1 18/- being commission on advertisements obtained for publication in the Journal.

It was stated that the accounts for the advertisements had not yet been collected.

After discussion the Secretary was authorised to pay the amount.

Small Stock Subsidy.

(a) *Wood Park: Application for subsidy for Berkshire Boar.* This application was for the sum of Two Pounds Ten Shillings, being half the price of the boar selected.

The subsidy was granted subject to the report of the Supervisor, and under the usual specified conditions.

Office.

(a) *Application from Miss Dias for one month's leave: October.* The leave was granted pending the approval of the newly appointed Secretary.

Resolutions from Branches.

(a) *Portland Branches Associated re Growing of Peas in place of Bananas.* This resolution conveyed the request that markets be ensured for the sale of peas which the Claverty Cottage Branch proposed to grow in place of bananas.

The matter was referred to the Committee dealing with the local marketing of vegetables.

(b) *Hanover Branches Associated re Revision of Rules and representation of parishes.* This resolution stated that the five Western parishes were not represented on the Board of Management and desired that the rules be revised to provide for the representation of all the parishes.

The Secretary was directed to advise the Associated Branches that if the previous method of co-option of a member or members by the Board of Management to fill vacancies was again brought in, the matter could be adjusted.

It was also decided to refer the matter to the next Half-Yearly General Meeting.

(c) *Tranquility re Registrar of Births and Deaths.* This resolution requested that such an officer should be appointed for the Tranquility district.

The Secretary was directed to forward the resolution to the Registrar General.

(d) *Westmoreland Branches Associated re:*—(i) *Telephone Station at Cave.* This resolution asked that a Telephone be installed at Cave Post Office.

The Secretary was directed to forward the same to the Postmaster for Jamaica.

(ii) *Lock-up Dispensary at Cave Square.* This resolution, in addition asked that visits of the Medical Officer be paid monthly or bi-monthly to that centre.

The Secretary was instructed to forward the resolution to the Director of Medical Services.

(iii) *Corn Industry.* This resolution asked that the Society purchase more corn and other grains for distribution to farmers who required it.

The matter was directed for reference to the Vegetable Committee.

(iv) *Bombay Mango Industry.* This resolution requested that the Department of Science and Agriculture should be urged to increase the number of ingrafted Bombay Mango plants to meet the increasing demand.

The Secretary was directed to place this before the Instructors Committee.

(v) *Visit of Bee Instructor.* This resolution conveyed the request for a visit from the Bee Instructor to the area including the Mearnsville Branch so that instructions regarding the rearing of Queen Bees could be given.

The Secretary was directed to refer the matter to the Instructors Committee.

(e) *St. Mary Branches Associated re payment of Authorised Persons' Claims.* The following resolution was submitted:—

"Whereas complaints have been made frequently by Authorised Persons that their claims for remuneration in respect to their services are often neglected, ignored and indifferently attended to by Clerks of Courts and those responsible for such matters: Be It Resolved that the Associated Branches impress upon the Police Authorities the necessity for giving more prompt and thoughtful consideration to the claims of Authorised Persons."

The discussion which followed disclosed that the difficulties encountered were chiefly due to the necessity for keen deferentiation between larceny and praedial larceny.

It was decided that the matter should be taken up with Government.

(f) *Glengoffe re Amendment of Authorised Persons Law.* The following resolution from the Glengoffe Branch was also to be referred to Government:—

"Whereas the Authorised Person has hitherto been of very great use in the lessening of Praedial Larceny throughout the whole Island, but with the recent enforcement of the Law that he deal with cases of Unlawful Possession only, reducing his usefulness to very nearly nil: Be it resolved that the Government be asked to amend the Law so that the Authorised Persons be empowered to deal effectively with the Praedial thief."

(g) *Sturge Town re Show in St. Ann.* This Branch asked that the Society sponsor a Show in St. Ann.

The Secretary was directed to advise the Branch that if a definite programme was forwarded to the Society the matter would receive consideration.

(h) *Strawberry re visit of His Excellency the Governor.* This resolution asked that the Governor be requested to visit the Strawberry district.

The Secretary was directed to refer the resolution to the Honourable Member and the Custos for the parish of Westmoreland.

New Members.

The following were elected to membership with the Society:—

J. E. Scott, 15 North Avenue, Swallowfield, Cross Roads.

H. Shoucair, 40 Port Royal St., Kingston.

V. E. Breakspeare, 41 Orange St., Kingston.

Other Business.

(b) *Report from Supervisor Hanson re proposed Show at Exchange.* After the report was read the Board directed the Secretary to advise the Branch that they had no objection to the local Show being carried through.

(c) *Application from Accountant for 4 weeks leave.* Mr. Macdonald's application for leave, beginning during September, was not entertained, as it was considered inopportune, and the Secretary was directed to advise the Accountant to make application later on during the year.

(d) *Authorized Persons. Return of Arrests for Quarter ending* 30.6.37 was submitted and the Secretary directed to publish a summary of the same in the Journal.

(e) *Journal of Avicultural Society.* The Secretary presented a magazine which he stated was the initial publication of the Avicultural Society of Jamaica which Society was affiliated to the Jamaica Agricultural Society.

This was received.

The meeting then adjourned to Wednesday, the 6th day of October, 1937, at 11.30 a.m.

BOARD OF MANAGEMENT.

The regular monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the offices of the Society, 10--12 North Parade, Kingston, on Wednesday the 6th October, 1937 at 11.30 a.m. There were present: Hon. Geo. Seymour Seymour, O.B.E., First Vice-President, in the Chair, Rev. W. J. Thompson and Mr. U. Theo. McKay, Second and Third Vice-Presidents, respectively, Mr. F. E. V. Smith, Acting Director of Agriculture, (*ex-officio*), Messrs. Sidney Barton, R. A. Burke, C. O. Cover, T. P. V. McDaniel, D D Phillips, C. L. A. Stuart, S. M. Walker and W. Harper Watson; Messrs. P. St. L. Bacquie and A. P. Hanson, Supervisors of Instructors and the Secretary, Arthur Thelwell.

The Chairman welcomed Mr. Burke who had recently returned from a holiday abroad.

Mr. Burke thanked the Board. He said that whilst in England he had had the pleasure of having a talk on agricultural matters with Doctor Tempany, Assistant Agricultural Adviser to the Secretary of State for the Colonies, who was deputizing for Sir Frank Stockdale during his absence abroad. Doctor Tempany had authorised him to say that at the Colonial Office they were quite satisfied with the work of the Jamaica Agricultural Society and also with the work of the Department of Science and Agriculture, which latter body should do the research work and pass it on to the Society for the dissemination of the knowledge. Regarding co-ordination the Doctor thought the Colonial Office would be quite satisfied so long as the Director of Agriculture was Chairman of the Instructors Committee of the Society. He (Mr. Burke) was glad to bring the information to Jamaica that the Colonial Office was quite satisfied with the agricultural activities of the Colony.

Apologies for Absence.

Apology for absence was submitted on behalf of the Hon. E. A. McNeil.

Confirmation of Minutes of Previous Meeting.

A copy of the minutes of the previous meeting having been circulated, these were taken as read, and confirmed.

Matters arising out of the previous Meeting.

(a) *All Island Exhibition.* The Secretary submitted a statement to the effect that a meeting of the Committee of Management dealing with the matter had been called for that afternoon, and that a report would be submitted in due course.

(b) *Mrs. Cradwick's acknowledgment of letter of sympathy* from the Board in respect to the demise of her late husband was submitted and noted.

(c) *Wakefield Branch—Financial matters.* The Secretary submitted a statement as to what had been done since the previous meeting towards straightening the accounts of the Wakefield Branch.

The matter was deferred pending further information, and the Secretary was instructed to find out the cost of the services of the Solicitors to that date.

(d) *Reply to Mr. Phillips' question re Native Cornmeal.* In reply to the following question:—

"What is the cost per bushel of the manufacture of cornmeal from locally grown corn," the following was submitted:—

The cost of manufacture of one bushel of native cornmeal is as follows:—

Power, 2½ Kilowatts at 6d.	1/1d.	
Overhead Labour attending mill, say ...	2d.	
Depreciation on mill, say	2d.	
Flour bag to put in meal	2d.	(1 bag for 6d. holds 3 bushels +)
Total	1/7d.	

The cost per unit power for running the Society's corn mill appears to be excessive.

(Sgd.) ARTHUR THELWELL,
Secretary.
6th October, 1937.

Mr. Phillips said that in view of the increasing demand for native cornmeal, the information would be useful.

The Secretary was directed to send to Mr. Phillips a reply to his further question as to the exact amount (in bushels) of cornmeal to the bag.

The Acting Director of Agriculture said that if the volume of business warranted it, the Society's mill could be transferred to the Low Temperature Station where the corn could be ground at a much lower cost.

He was thanked for the offer.

(e) *Letter from C.S.O. re Corn.* Regarding Letter No. 4222/37 of date 5th October, 1937 the Secretary submitted the following memorandum:—

This matter was referred to the Vegetable Committee, but was not considered as only an informal meeting was held, there being no quorum.

The following action has however been taken:—

Arrangements have been made with the Superintendents of Hope Stock Farm and Grove Place Stud Farm for the use of native corn in their feed rations, and an appreciable quantity will be absorbed in this way. This, however, is entirely dependent on the price, as if this goes beyond 3/9d. per bushel it becomes uneconomical as a feed.

I have also been in communication with the Superintendent of Stores, General Penitentiary and the Clerk and Purveyor of the Lunatic Asylum with a view to finding out whether they can make use of local corn for the manufacture of cornbread which is the greatest mode of consumption in these institutions.

An appreciable quantity of corn is handled by the Society as:—

(a) Agents for producers.
(b) Stock and poultry feed.
(c) Cornmeal for Poor Houses.

It is suggested that as soon as final figures as to consumption from these various sources are available, Government be replied to along these lines.

In addition it is proposed to publish in the Journal of the Society various recipes for the use of corn as an article of diet.

(Sgd.) ARTHUR THELWELL,
6th October, 1937. Secretary.

Mr. McKay said it would be useful if Government would consider paying a little more for the corn to bring the price to four shillings per bushel.

(f) *Reply from Acting Director of Agriculture re Preservation of Mangoes.* The following was read:—

No. CS : 178.

11th September, 1937.

"I have to acknowledge the receipt of your letter No. 286 dated 7th September, 1937, conveying a motion passed at the last meeting of the Board of Management in connection with the preservation of mangoes. Experiments on the preservation of various Jamaica fruits, including mangoes, will ultimately be undertaken by the duly organized Marketing Division of this Department,

(Sgd.) F. E. V. SMITH,
Actg. Director of Agriculture.

In reply to a question from Mr. McKay, the Acting Director of Agriculture stated that the canning project would be undertaken during the period 1938-39.

He stated that the manufacture of mango Chutney would also be considered.

Mr. Burke referred to an article which he said appeared in the Press to the effect that no private party could export mangoes except through the Low Temperature Station; he thought there was prospect of a good market for this fruit abroad from his impressions.

The Acting Director of Agriculture said that private enterprise could export mangoes provided the packing and transportation was done through the Low Temperature Station.

Mr. Burke said this placed the private exporter at a disadvantage if he could arrange for such services at a lower cost than that of the Low Temperature Station, and whereas the exporter might be satisfied to put up with hard "knocks" on his own, he might not be satisfied if the same loss was caused apparently through a third party.

The Acting Director of Agriculture explained that there was no intention on the part of the Government to cripple private enterprise by the introduction of the new regulations. On the other hand the intention was to organize the export trade. Mangoes did not lend themselves to such handling as suited other products, i.e., oranges, grapefruit and bananas. Mangoes had to be properly processed, and the object was to establish the industry on a proper basis.

Questions.

(a) *Mr. McKay re Coffee Industry Report: Peas: Model Apiary: Cashew Nursery.* The following questions and replies were submitted:—

Question 1.—Has the report of the Committee on the Coffee Industry been presented to the Government?

Question 2.—If so what steps, if any, have been taken to put the recommendations of the Committee into effect?

Answer to 1.—Yes. A majority Report and a Minority Report signed by Captain Archie DePass were forwarded to Government covered by letter dated 19th November, 1936.

Answer to 2.—Government sugested that much could be done by way of instruction and inspection, and to this end instructions were issued to Instructors to the effect :

(a) That energetic steps should be taken to educate and encourage growers in the proper methods of cultivation, pruning, fertilizing and curing.

(b) That all coffee should be dried or cured on barbecues or wooden trays or platforms suitable for the purpose, and that where conditions are suitable encouragement be given for pulping the coffee before curing and that farmers should be educated in the matter of the value of proper curing.

(*Circular to Instructors dated* 15.2.37.)

Question 3.—What is the outcome of the report of the Pea Industry Committee?

Answer to 3.—This matter was dealt with by the Staple and Minor Products Committee and a report submitted and discussed by the Board of Management on the 3rd June, 1936, *vide* Journal, June and July 1936 p. 348.

Recommendations 1 and 2 : Dehydration—This experiment has been undertaken, the 6 months storage period has not yet expired but will do so on 26th December, 1937.

Recommendation 3 : Experimental Plot—An experimental plot was established at Temple Hall and duly reported on by Supervisor Hanson (Report presented to the Board on the 7th July, 1937 and tabled *vide* Journal July and August 1937 p. 402.)

It was thought that it was unsatisfactory to draw final conclusions as to cost from a single experiment and arrangements are being made for repeat experiments.

Recommendation 4 : Experiments by the Department of Agriculture. I have been advised by the Acting Director of Agriculture that plans have been made for carrying out a series of experiments during the coming season

Question 4.—What is the position of the Model Apiary.

Answer to 4.—Negotiations are in progress and arrangements being made to transfer the Model Apiary to the new site on the Spanish Town Road. A lease has been executed and a plan of the layout with estimated cost is in hand and the work is being expedited. It is proposed to remove the Apiary after the October rains.

Question 5.—What has been the success of the Cashew Nursery in Mid-Clarendon? How many plants have been raised in pots? How many distributed? And how many have been actually planted and now growing?

Question 6.—What has been the cost of establishing the Nursery up to date? Has any revenue been got, and if so, how much?

Answers to 5 and 6.—7,000 plants are now ready for distribution. Various attempts to get them taken have been made with small response. Only 345 plants have been distributed.

The seedlings were attacked by thrips and on advice from the Entomologists were at first sprayed with paranaph and later some imported predators were released in the nursery. Instructor Virtue reports successful control of the thrips by the predators.

Answer to 6.—The cost of establishing the nursery to date is £17 12/-.

Detailed statement from Instructor Virtue is attached.

Revenue to date, £1 1s. 3d.

(Sgd.) ARTHUR THELWELL,
Secretary.
6th October, 1937.

It was decided that the price of the Cashew plants should be reduced to half-penny each, delivered at the Nursery, and that they should be made available to the whole Island.

Resolutions.

(a) *Mr. C. L. A. Stuart re establishment of Banana Meal and Fig Factories.* Mr. Stuart moved the following:—

"Whereas due to the fact that there is no competition in the local banana market and consequently rejections are very often heavy : Be it resolved that the Government be approached and asked to encourage the establishment of fig and meal factories by monetary aid or otherwise so as to utilise the enormous waste of bananas that now takes place."

Speaking on the resolution, Mr. Stuart said there was an enormous waste of bananas through rejections by the Companies doing the export trade. The rejected fruit was not utilized to advantage and he was of opinion that it would be a good thing for Government to do something in the matter. Several projects had been propounded by firms from abroad, but in each instance enough local capital had not been forthcoming and they had to be abandoned. He thought that if a Company was started, the Government could as they did in connection with the Producers' Association, appoint a Director on the management which would create confidence in the public.

Mr. Watson seconded the resolution.

Mr. Barton said he did not desire to crush enterprising proposals but his experience had been that banana figs had been manufactured by individuals and firms in Jamaica in the past but this product had never taken the market as a confectionery neither in the Island nor abroad.

Mr. Stuart said that possibly Government could find out if there was a market for the products. He understood there was a fairly good market in Canada.

The Acting Director of Agriculture said the subject of the sale of by-products of the banana had been before the Board and under consideration of the Department of Agriculture over a considerable number of years, and they had found that the main problems were markets and cost. Promising lines had been followed up but no sound commercial proposition had evolved. The question had not been abandoned, however, and whenever there was a possibility of setting up such an industry the Department of Agriculture would be willing to assist.

It was generally accepted that the rejected bananas were all used up locally.

Mr. Stuart said that in view of the statement made by the Acting Director of Agriculture, with the consent of his seconder, he would withdraw the motion.

Statement of Accounts.

(a) *Statement for September.* The statement of accounts for the month of September was submitted.

Mr. Cover pointed out that from the record of the amounts collected for advertisements it would appear that the estimated receipts would hardly be realized. He asked that the matter be looked into.

Communications.

(a) *Letter from C.S.O. re Accounts for Printing.* The following was submitted:—

No. 482/37.

13th September, 1937.

"With reference to your letter No. 29 of the 20th July, 1937, in regard to the cost of production of your Society's Journal, I have the honour to inform you that while it is appreciated that delegates to the Half-Yearly Meetings of your Society desire to have their speeches recorded in the minutes of these meetings, Government considers that the reports of such speeches could be considerably condensed without losing any of their value.

2. In view of the urgent need for economy, Government is unable to approve of the continuance of the practice of printing in extenso in the minutes all of the speeches made by delegates at Half-Yearly Meetings."

(Sgd.) F. C. H. WILSON,
for Acting Colonial Secretary.

The Secretary stated that an effort was being made to reduce the volume of the minutes of the Half-Yearly Meeting.

Rev. Mr. Thompson left the meetng.

(b) *Letter from Director of Public Works re Additions to Buildings.* The following was submitted:—

No. 4488

28th September, 1937.

7995/37

"In reply to your letter No. 296, dated 11th September, 1937, I have to say that arrangements have been made to put in hand the erection of the New Chemical Store at an estimated cost of £270.

2. The estimated cost of the other works for which this Department has prepared plans and specifications is as follows:—

(i) New Kitchen and W.Cs.	...	...	£103
(ii) New Produce Shed ...	...	...	£500 (approx.)

3. Some savings on (i) and (ii) will be effected by re-use of materials salvaged from demolition of existing structures, and work will be put in hand as soon as possible after completion of the New Chemical Store."

(Sgd.) H. SIMMS,
Director of Public Works.

The Chairman explained that Government had requested that the material for the spraying of bananas should be stored on the Society's premises, but as there was no storage space available it was decided to erect the Chemical Store. With the balance in the Society's hands of £175 from the original vote of £1,000 for the additions to the premises he had directed that a sum should be allocated from the profits of the Seeds Department to complete the Produce Shed and the other alterations as set out in the letter.

The Board approved the action of the Chairman.

(c) *Letter from Instructor Robotham re his district* was referred to the Instructors Committee.

(d) *Application from Ebenezer Branch for grant for Demonstration Plot.* The application was for a grant of £2 3s. 6d., being half the cost for establishment of project plot in connection with the Juvenile Branch.

On the Secretary's statement that the amount was available from the vote for Encouragement to Juvenile Branches, it was agreed that the grant should be made subject to a satisfactory report from the Supervisor of Instructors.

Office.

(a) *Appointment of Assistant Secretary.* The following memorandum from the Secretary was submitted:—

I invite your attention to the question of the appointment of an Assistant Secretary to be designated either "Assistant Secretary" or "Chief Clerk" at your discretion.

The need for such an officer is most apparent. At the present time the office as constituted burdens the Secretary with so many details of routine work that it appears to me to be a physical impossibility for him to find the time to devote his attention to the bigger issues which his work involves.

The proposal which I submit for your consideration is that we advertise for a suitable person at a commencing salary of £300 per annum. This will involve a provision of £100 this financial year if the appointment be made to begin on the 1st December, 1937.

The attached statement which was submitted to the Instructors' Committee at their meeting this morning shows that the money is available from savings under the head "Personal Emoluments."

(Sgd.) ARTHUR THELWELL,
Secretary.
6th October, 1937.

The Chairman reminded the Board that the present Secretary was seconded for service with the Society for two years and the proposal

had been that he should train an understudy. Funds were available for the salary of an officer for the remainder of the present financial year, and provision would necessarily be made for the next year's salary on next year's estimates.

Mr. McKay recollected that the necessity for an Assistant Secretary had often been voiced by the Board, but Government had refused to make a grant to the Society that would allow for such an appointment. Although he agreed that it was a necessity he suggested that the money available should be used for the payment of increments to the Instructors for the year 1937-38, and an Assistant Secretary appointed to begin work at beginning of the next financial year.

Mr. Burke thought the appointment should be made as early as possible.

Mr. Barton suggested that a member of the Field Staff should be promoted to the position.

The Acting Director of Agriculture then moved "That an advertisement be inserted in the newspaper for an Assistant Secretary on probation for a period of six months at a salary not exceeding £300 per annum: during the probationary period one month's notice to terminate the appointment."

He suggested that a Special Sub-Committee be appointed to meet in October to make recommendations regarding the ten best applications, so that at the meeting of the Board in November a final selection could be made. This procedure, he added, would not preclude application from any member of the Staff.

The motion was seconded by Mr. Harper Watson.

Mr. Walker supported the proposal for promotion of a member of the Field Staff and suggested that if this were not done the commencing salary should be £250 per annum.

Mr. Cover supported Mr. McKay's proposal that the Instructors be paid their increments. He added that in the past Government had disapproved of the overhead expenses of the indoor staff and before they committed themselves it should be ascertained whether Government was in favour of the appointment of an Assistant Secretary.

The Chairman said that he was of opinion that in connection with the secondment of the present Secretary, Government understood that this would be necessary, but if it was thought advisable to get a statement from Government in the matter, this could be done.

This was agreed upon.

Mr. Cover then moved that the first commitment on the available funds be the payment of increments for the financial year 1937-38 to the Field Staff as originally allocated.

The Chairman said he understood from the Secretary that funds were available for the allotment of £100 for the employment of an Assistant Secretary and for the payment of these increments, if other proposals which had been submitted, and which would absorb some of the money were not adopted.

Mr. McDaniel seconded Mr. Cover's motion.

The Chairman then put to the vote the motion by the Acting Director of Agriculture which was amended to read as follows:—"That an advertisement be inserted in the press for an Assistant Secretary on probation for a period of six months at a salary of £250 per annum rising by increments of £20 per annum to £300. During the probationary period one month's notice to terminate the appointment. Candidates to be asked to furnish medical certificate of health.

This was carried.

Mr. Burke then moved that the standing orders be suspended to admit the passing of a resolution rescinding the resolution passed by the Board at their meeting held on the 4th November, 1936 which stated that no increases of salary be made to the Field Staff except those to whom the Board was committed.

This was seconded by Mr. Stuart and carried.

Mr. Cover's motion was then put to the vote and carried.

(b) *Leave.*

(i) *Application from Miss Cooper for* 1 *month from* 18*th Oct.*
(ii) *Application from Miss J. Robertson for* 1 *month from* 1*st Nov.*
(iii) *Application from Miss J. Hanson for* 1 *month from* 1*st Dec.*

On the recommendation of the Secretary leave as above was granted.

Industries.

(a) *Bee Industry Site.* The Chairman submitted Letter No. 1010/37 of date 31st August, 1937, from the Water Commissioner covering 2 copies of an Agreement in connection with the lease of 2 acres of the Sewage Farm Lands to the Society for the accommodation of the Model Apiary.

On the motion of Mr. Cover, seconded by Mr. Stuart, the Chairman was authorised to sign the Agreement.

The Secretary was directed to pay the account for Three Guineas for the costs.

Reports from Committees.

(a) *Instructors.* The following was submitted:—

6th October, 1937.

To the Board of Management
Gentlemen,

Your Instructors Committee met this morning and beg to report as follows:—

1. *Proposed Lectures to be given by Instructors*:—It was decided that this matter be left to the Chairman and the Secretary for detailed consideration and report.

2. *Condensed Form of Instructors' Reports*:—It was decided to accept the Memorandum submitted by the Secretary, but that a Weather Report should be included in the Crop Report.

3. *Foreman Francis*:—It was decided that Foreman Francis be invited to submit himself to the Government Clinic for examination within two weeks, failing this the Committee would take a serious view of the situation.

4. *Extra Remuneration for Travelling to Instructors Henderson and Jones*:—It was decided that each Instructor should be remunerated at the rate of £20 per annum for additional work taken over from Supervisor Hanson.

5. *Appointment of an Agricultural Foreman in the West Central District*:—It was decided that a small Committee consisting of the Chairman of the Instructors Committee, the First Vice President, the Third Vice-President, the two Supervisors and the Secretary be deputed to go into the matter and report to the next meeting of the Instructors Committee.

6. *Instructors Increments*:—It was decided that the matter should be gone into by the Sub-Committee and that they should report to the Special Meeting to be held on the 20th October.

7. *Demonstration Plots*:—Report on Chepstowe Plot. Finances: A Statement as to the allocation of the Vote to various Plots and proposals for payment of the expenses in connection with them was made by the Acting Director of Agriculture.

The Sub-Committee appointed by the previous meeting recommended that the Chepstowe Plot be accepted and this was agreed to, Mr. McKay dissenting.

8. *Instructor Shirley: Extra travelling*:—It was decided that in future all arrangements for extra travelling should first be submitted to the Instructors' Committee for their approval, but that this application be allowed.

9. *Resolutions re Fertilizers*:—It was decided that the Secretary should go into the matter and that the question be brought up at the next meeting of the Instructors Committee.

10. *Instructors Reports*:—With regard to the comment by Mr. McKay—Instructors Reports week ending 7th–28th August—re excessive number of holdings visited and

the need for more intensive work, it was decided that the matter should be brought to the attention of the Supervisor.

11. *Transfer of Above Rocks Branch* :—With regard to the transfer of Above Rocks Branch to Instructor Henderson, it was decided that the matter be referred to the Sub-Committee.

12. *Cassava Varietal Plots* :—A Progress Report showing that the Plots were being reaped and the Cassava analysed was presented, and it was decided that sufficient planting material be reserved for the replanting of the Plots and that the balance be distributed and a record kept.

13. *Transfer of a Foreman to the Bull Savanna Area* :—It was decided that this would be an unnecessary expense for the Society as the Department of Agriculture had already provided a special officer for the purpose.

14. *Travelling Allowance of the Beekeeping Instructor* :—It was decided that this Officer be given a subsistence allowance of 10/- for the occasion under consideration.

15. *Tree Planting* :—It was decided to accept the Memorandum submitted by the Secretary, based on the proposal for an Annual Tree Planting Day submitted by Mr. McKay.

16. *Agricultural Foreman* :—The question of the appointment of an Agricultural Foreman in connection with the Bombay Mango Industry in Instructor Wray's district was referred to the Special Sub-Committee.

17. *Travelling of Foremen in Mr. Byles' District* :—It was decided to give them an allowance of 10/- each.

18. *Instructor Coke* :—It was decided that a small Committee consisting of the First Vice-President, Mr. Stuart, the Supervisor and Secretary should go into this matter and report to the next meeting.

19. *Accounts paid for Instructor Shirley* :—It was decided that this should be submitted to the Board with a recommendation that the system should be discontinued.

(Sgd.) F. E. V. SMITH, Chairman Instructors Committee.
ARTHUR THELWELL, Secretary.

The Acting Director said that the report from the Instructors Committee was submitted for the information of the Board and further that it was necessary to get confirmation in regard to two special financial matters.

On the motion of the Chairman, seconded by Mr. Burke, it was agreed that the decisions of the Committee in respect of these two matters be upheld.

With regard to the recommendation from the Committee in respect to the paying of private accounts for Instructors by the Office, on a statement by the Secretary that he did not object to having this done, but requested authority for doing it, it was decided that the practice may be continued.

The meeting then adjourned for luncheon.

On the resumption there were present: Hon. G. Seymour Seymour, in the Chair, the Acting Director of Agriculture, Hon. C. A. Reid, Messrs. U. Theo McKay, C. O. Cover and T. P. V. McDaniel; the Supervisors of Instructors and the Secretary.

During the course of the meeting Rev. W. J. Thompson and Mr. S. M. Walker attended.

Tree Planting.

(a) *Report from Supervisor Hanson re St. Andrew Section.* The Secretary submitted the report and stated that a copy had been sent to the Government.

He was directed to publish the report in the Journal.

On the suggestion of the Acting Director of Agriculture it was agreed that a copy of the report be forwarded to the Surveyor General and that in future activities in this connection be brought into line with the policy being pursued by the Government through their Forestry Officer.

Small Stock Subsidy.

(a) *Application from C. W. Little re (Toggenburg) Buck.* The Secretary stated that the animal referred to had been purchased through

the Society and the proposed subsidy was 50%—£1 11s. 6d., and that funds were available for this grant. Conditions regarding fees and records would be arranged through the Supervisor.

The subsidy was granted.

Shows.

(a) *Exchange—Draft Prize List, etc.* The Secretary stated that the Branch had requested that their printing should be done through the Society. He had written asking them to lodge the required deposit of £2 10/- which he had not yet received.

Consideration of the question of the printing was deferred pending the receipt of the deposit of £2 10/-.

Authorised Persons.

(a) *Additions to Schedule A of Law: Letter from C.S.O.* Letter No. 5176/36 of date 20/9/37 was read and the Secretary was directed to give the information regarding the addition of Tomatoes and Sweet Peppers to the Schedule, the necessary publicity in the Journal.

New Members.

On the motion of Mr. Cover, seconded by the Acting Director of Agriculture, the following were elected to membership with the Society:—

Chas. A. Wilson, Mandeville.
R. C. Livingston, 26 Duke St., Kingston.
Rupert E. Meikle, Port Maria.
Denis Harpley, Elm Tree, Cross Roads.
Cecil Lawrence, c/o Collector of Taxes, Port Antonio.

Other Business.

(a) *Secretary's Report on Travelling* done during September was submitted and noted.

(b) *Invitation from St. Mary Branches Associated* to the members of the Board and the Secretary to attend their Annual Meeting scheduled for the 4th December at Highgate was submitted and noted.

(c) *Resolution from N.W. Hanover Branch re licensing of all Banana Buyers.* This resolution advocated in addition that the system of the employment of "runners" should be discontinued, owing to the illicit buying of bananas through which many cultivators had been robbed of their "best bunches" of bananas and it was difficult to detect and bring to justice the thief or thieves.

After discussion it was decided to forward the resolution to the Advisory Board under the Agricultural Produce Law with the request that the matter be taken up with Government.

(d) *Resolutions from Elgin Branch re (i) Road.* The Secretary was directed to forward to the Parochial Board of Clarendon this resolution which asked for adequate road facilities for that section of the parish.

(ii) District Constable. The need for the services of a District Constable was conveyed and the Secretary was directed to refer the matter to the Inspector General of Police.

(e) *Sick Leave—Mrs. Edwards, 28th September to 11th October.* A Doctor's certificate covering this leave was presented.

Combination of positions of Bee Instructor and Inspector. Mr. Reid brought to the attention of the Board that some time ago the question of the present Bee Instructor carrying out the duties of Bee Inspector

was discussed and it was agreed that this should be adopted and the Director of Agriculture recorded his approval of the proposal. This, he understood, had not yet been carried out.

After discussion on the matter the correspondence was read.

The Acting Director of Agriculture stated that the matter was receiving the attention of the Department of Agriculture but it needed time to bring it to finality.

The meeting then adjourned to Wednesday the third November, 1937 at 11.30 a.m.

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THE CORN SITUATION.

The production of corn in Jamaica is an appreciable industry, fairly extensive acreage being cultivated in many parishes, chiefly St. Ann, St. Elizabeth, Manchester and Trelawny.

Two crops, Spring and Fall (short-day), are produced annually. In only very few instances is the crop cultivated mechanically, rather is it planted by hand implements, and the technique is faulty and gives poor returns.

Little or no facilities exist for drying and storing, and this, added to the difficulty of keeping where storage facilities do exist, makes it imperative that the crop be marketed fairly soon after reaping. Hence, at two periods of the year the local corn market is glutted.

At the same time a steady importation of corn meal from the United States of America takes place, and the local consumption of this article is appreciable. Some five hundred bushels per annum are used in the Government Institutions for making cornbread,—an important part of the dietary of the inmates of these Institutions.

This appears irreconcilable with the bi-annual glut in the local market until it is recognised that meal made locally will not keep because of the lack of facilities for efficient dehydration and proper preparation of the corn, i.e., removal of the "eye" or kernel: thus, local meal has to be consumed almost at once.

It is recognised, however, that locally prepared meal, because it is less processed, and contains the kernel of the corn, possesses greater food value as an article of diet. This type of meal is now prepared by the Jamaica Agricultural Society at its Office and is coming more and more into local favour. It is sold at 20'- per bag of 196 lb. and retailed at 1½d. per lb., much below cost.

(The cost of production of a bag of corn meal is set out elsewhere in this issue of the Journal.)

The obvious outlets for the corn crop are its use as an article of diet for human beings and as ration for animals.

Admittedly not enough use is made of corn in homes in Jamaica, and in this direction the housewife can help the producer and the Colony substantially, by making daily use of one of the many dishes which can be so easily prepared from corn, and all of which are admittedly healthy and appetising. A list of recipes is published below.

One form of consumption—the use of young corn at table—is for all practical purposes, unknown in Jamaica. A special appeal is therefore made to housewives to popularise the use of corn in this fashion and so assist this deserving industry.

A fair proportion of the crop never finds its way into the local market at all, but is used by producers, both in its green and cured state, as ration for animals; but nothing like full use is made of corn as a ration for feeding mules, horses and dairy cattle. The change over from animal drawn to mechanically propelled vehicles has adversely affected consumption in this direction.

The largest users of corn for ration are the Public Works Department and the Kingston & St. Andrew Corporation. The former uses an average of about 23,000 bushels per annum for which they pay an average price of 5/4¾d. per bushel: the latter some 6,000 bushels at an average price of 4/9d.

Now there are many imported feeds for which corn can be made an efficient substitute, and provided it be properly balanced and the price reasonable, an economic ration of high nutrient ratio and palatability may be easily made up. The snag is that as soon as the price of corn

rises beyond 4/- per bushel, it becomes uneconomic as a stock feed and may be replaced by cheaper imported feeds.

The Society has recently put on the market a balanced ration with corn as a basis, which is suitable and economic for feeding of dairy cattle and bulls, and enquiries from dairymen and penkeepers are solicited.

The Society's policy is to endeavour to market corn for growers, and to this end a stable price of at least 4/- per bushel is paid. Unfortunately, this price has not only not helped the producer, but has succeeded instead in helping to create a block in the market especially in that type of corn suitable only for feeding stock. Prices ranging from 2/6d. to 3/- for the Spring crop and 2/9d. to 3/6d. per bushel for Fall crop are paid to producers by local dealers who subsequently sell this cheaply bought corn to the Society at prices ranging from 4/6d. to 5/6d. per bushel. Thus not only is the sale of corn blocked because the price at which the Society has to sell is too high, but the persons whom the standard price was devised to help are not being benefited.

The first remedy that suggests itself, obviously, is that growers should endeavour to make direct contact with the Society in the first instance for the sale of their corn, and secondly that there should be a higher standard of cultivation making for better returns per acre, so that a lower price per bushel will be remunerative.

At the present time, the yield per acre is in the vicinity of 15 to 18 bushels, and while it is admitted that this return is made from corn grown along with other crops, it is ridiculously low.

A fair crop of corn should produce 2,500 lb. dry cobs which, on shelling, will give 2,000 lb. grain or over 33 bushels per acre.*

With two crops per annum, there should be a gross minimum cash return of £13 4/- per acre per annum at 4/- per bushel. This compares most favourably with many crops, while the cost of cultivation is low.

The lines of action for increasing yield are obviously propagation of better seeds and revision of the method of planting and cultivation. The Department of Agriculture and the Society have been experimenting with a view to the production of better seeds, and arrangements have been made for continuing this work during the coming season.

Great strides have been made in corn breeding during the past five years by the Agricultural Research Stations of the Colleges of Canada, and it is hoped that working along similar lines in Jamaica, an improved type of seed corn will soon be available to growers.

It is up to growers themselves to follow the advice of their Agricultural Instructors with regard to improved methods of planting and cultivation.

With regard to the storage of corn, the Society with the assistance of the Department of Agriculture has erected in Stewart Town, a corn crib for providing storage facilities for corn from the surrounding districts. If the experiment proves successful, similar cribs might be erected in other chief corn growing districts. But it must be obvious that the chief value of such storage will be to help marketing by spreading the sale of the corn crop over a longer period of time, and not as some persons seem to feel, to facilitate later disposal of this stored corn at a price, during times of scarcity, which will be uneconomic and prohibitive to consumers.

The corn industry has made rapid strides in recent years. With the

*Professor R. Cecil Wood—A Note-book of Tropical Agriculture.

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steady opening of new lands to small farmers, production will continue to increase, and all those who are interested in the industry should face all the facts squarely and endeavour to put the industry on a secure basis.

Recipes.

Hominy.—Put three cupfuls of clean hardwood ashes into 3½ pints of cold water and boil thirty minutes. Leave until the ashes settle. Pour off the clear water, which should feel slippery. Put in the water 8 quarts of dry corn; add more water so that the corn is well covered, and boil until the hulls begin to come off. Drain and wash the corn in cold water, rubbing thoroughly with the hands to remove the hulls. Wash until there is no taste of the lye.

To prepare for the table put into clear water and boil until tender. It may be served with shredded coconut and salt, with shredded coconut and sugar or as porridge with milk. (Coconut milk gives it a nice flavour). It may be reheated in fat or served hot with a thin white sauce.

(The prepared corn may be kept over a long period and used as required).

Cornmeal à la Mode.

Of the several ways in which corn meal may be cooked the following has proved most popular. Sufficient can be made to last two or three days, and it can be used as a batter pudding with meat, eaten with jam or fried with bacon for breakfast. It tastes like Yorkshire pudding, and has the great advantage of not requiring any milk or eggs in it.

Ingredients:

1 cupful corn meal
a pinch of salt.

Sprinkle the meal into one pint of boiling water, boil *slowly* for half an hour, stirring now and again. At the end of the time turn into a shallow dish. When cold cut into squares and fry a golden brown in hot fat as required.

The above may be used as a dessert if a

½ cupful of raisins
1 teaspoonful of sugar, and
½ teaspoonful of baking powder

is added to the mixture. Serve with a butter sauce.

Spoon Bread.—A delicious corn meal dish which should be better known:

2 cupfuls corn meal
2 eggs
1 teaspoonful soda dissolved in a little hot water
2 tablespoonfuls butter
1½ cupfuls sour milk or buttermilk
2½ cupfuls boiling water.

Add the meal gradually to the boiling water and cool. Add the butter, salt, buttermilk, soda and beaten eggs. Beat thin few minutes; pour into a buttered baking dish or deep pan, and bake in a moderate

oven for half an hour. Serve by the tablespoon from the baking-dish as a hot breakfast or supper bread.

CORNMEAL DUMPLINGS:

4 cups sifted cornmeal.
1 teaspoon salt.
2 teaspoons melted shortening.
Hot water.

Mix the salt and shortening into the meal. Add hot water to make a dough as soft as it can be shaped. Form the dough into thin oval cakes. Drop into boiling water and leave until cooked, or bake in hot oven or over an open fire on well greased pans. The crust should be browned.

CORN AND TOMATO.—Cut two cupfuls of corn from the cob; peel and cut up a cupful of ripe tomatoes; peel and cut fine one onion. Season the corn with one teaspoon of salt and a little pepper. Put the tomatoes into a pan, add to them a teaspoonful of sugar, put in the corn and onion and cook twenty minutes.

COST OF MANUFACTURE OF ONE BAG CORN MEAL FROM NATIVE CORN.

Weight of one bag Cornmeal	...	196 lbs.
Weight of bushel of Cornmeal	...	50½ lbs

Therefore 1 bag Cornmeal contains 3 23/25 bushels.

Weight of one bushel Corn	...	60-64 lbs.

It takes 3½ bushels Corn to make 1 bag Corn Meal:—
i.e., 217 lbs. Corn to make 196 lbs. Corn Meal.

Cost of Corn—3½ bushels at 4/-	...	14/-
Cost of Bag	...	9d.
Cost of Power	...	4/1d.
Overhead depreciation	...	1/6d.
Total Cost		£1 0s. 4d.



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SOIL EROSION.

Soil erosion, simply expressed, means the loss of good top soil by flood water, or, in cases of light sandy soil, by high winds. Generally speaking, the result of erosion is that in a short time land becomes less and less able to produce a crop profitably, and sooner or later, unable to produce a crop at all.

It has been estimated that in the United States of America, during the past fifty years, eleven million acres of what was first class agricultural farm lands have had to be abandoned on account of loss of fertility due to erosion.

It has been established beyond doubt that one of the greatest menaces to keeping up fertility of the soil is erosion. Once it starts, the downward passage of water is steadily reduced due to blocking of the pores of the soil. This blocking encourages the surface run-off of water, and when complete, leads to flooding even in times of very slight rainfall. An early result of this condition is the lowering of soil water-table, which in turn affects crops in the first instance, and later, lowers considerably springs and shallow wells which will readily dry up during periods of even short drought.

Erosion by water may be slow and even, affecting large areas of land, or sudden and localised, resulting in gullies and ravines. This latter example of erosion is apparent to the eye all over Jamaica and is well known to be a serious problem. Every year tons of fertile soil is washed from sloping lands down into gully courses and rivers and is at last lost in the sea. Apart altogether from the loss of soil, the surface of large areas is silted up due to blocking of the pores, thus the surface run-off is steadily increased and flooding becomes easier and easier. Soon trenches and drains are blocked, irrigation arrangements upset, and streams and rivers affected.

The rate of erosion has little reference to the total rainfall, but rather to the frequency of fall and its degree. Where rainfall is high, the surface run-off depends more than anything else on the amount of "cover" which is on the soil. Thus on wooded lands there is appreciably less erosion than on clean cultivated lands.

Lands under cultivation in catch crops and vegetables for instance are especially subjected to erosion. During a large part of the year this land is bare, and on light soils particularly, even a medium shower will set up erosion resulting in the first instance in "gall" patches and "hard pans," and eventually in the final breakdown of the structure of the soil: it thus becomes more and more difficult to keep up good tilth, and finally the soil loses its fertility.

The main cause of impoverishment in eroded areas is the removal of plant nutrients—the biggest loss being the washing away of humus cover and other nutritious and mineral substances.

It is well known that forest and well-wooded lands under heavy vegetation suffer less from erosion, and this was at one time believed to be due chiefly to the action of the "cover" in breaking the force of beating rain. Experiments have now established that the main protection is due to the fact that "cover" of undecomposed litter possesses water holding properties which is estimated to be some eight times greater than that of soil, so that thick layers of forest debris absorb a considerable portion of rainfall which it subsequently exudes slowly, and so not only prevents washing, but makes silting up of the soil pores impossible, encourages the downward percolation of water and so helps to preserve the natural structure of the soil.

Many effective methods of safeguarding soils are well known to practice and those may be considered under three heads:

The construction of barriers or devices to reduce the velocity of water run-off is the first. The simplest form of this practice is known locally as blind trenching, and this practice may effectively be widened to include simple terracing, levelling and banking with stones without high expense or very much more labour.

The provision of adequate and complete "cover" by litter and mulch, or the growing of a cover crop is another most effective measure, which compares favourably with leaving a heavy growth of vegetation on unused land. Though untidy in appearance this leaving of wild vegetation is second only to complete afforestation. Thus any form of entirely clean cultivation, especially on sloping land stands condemned.

The third simple device is that of planting main and other crops along the contour of hill sides—that is, instead of following straight lines, cultivations are laid out along the bulge of the sides of hills in semi-circles. The interspaces are then banked plant to plant and thus a continuous series of barriers is soon constructed. These form an effective barrier against washing.

More and more lands are being steadily opened up for cultivation. The major portion of these lands lie along hill sides with sharp incline and unless steps be taken to control erosion these lands will, in a few years be unable to produce crops profitably. Already the rapid deterioration of numerous holdings is causing serious alarm among small farmers.

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LIVESTOCK IN THE WEST INDIES.

By J. W. Howe, Dip. Ag., B.S.A., M.Sc., Headmaster Government Farm School, Superintendent Government Stock Farm.

Area.—The area known as the West Indies, is located in the Western Hemisphere, within 10 degrees to 27 degrees North, and 59 degrees 30 minutes to 85 degrees West. The whole area forms an archipelago, extending in the form of a curve from Florida in North America, to within seven miles from Venezuela in South America. The area can be roughly divided into three main groups:—

I. Greater Antilles—

	Square Miles.
Cuba	44,000
Haiti	10,200
San Domingo	19,300
Jamaica and Dependencies ...	4,450
Puerto Rico	3,400
II. Bahamas	4,400
III Lesser Antilles	4,400

The total area of the West Indies is approximately 90,000 square miles, which is distributed as follows:—

	Square Miles.
Independent	72,000
British	12,300
United States of America ...	4,000
French	1,300
Netherlands	450
Venezuela	100

Climate.—The West Indian area is for the most part purely tropical but does include such areas as the Bahamas, which are more properly termed sub-tropical. It will therefore be seen, that while there is bound to be considerable variation in conditions, the variations will not be extreme, and conditions existing in one locality are at least comparable to those of another locality in the same area

The climate is warm, but generally tempered by sea breezes which aid greatly in preventing extremes in temperature, which range from a mean minimum of 70 degrees in the Bahamas to a mean maximum of 85 degrees in such areas as Trinidad.

Rainfall.—The rainfall over the whole of the West Indies area, is fairly heavy, but unfortunately in most Islands is unevenly distributed, the greater part falling during the months of September, October and November. Rains known as the spring rains, come during April, May and June, but these rains cannot be relied upon.

The dry period is during January, February and March when little rain falls. This period is for the stockman, perhaps the most trying of the whole year, as lack of water and pasture make it necessary for him to supplement his feeding, if he is to keep his stock in proper condition.

Topography.—The Islands included in the West Indies are for the most part hilly to mountainous, with the exception of a few low lying

islands spread through the group. The altitude varies from a few feet above sea level in the case of some of the small islands to an elevation of 7,000 feet in the more mountainous islands. Due to such a range in the topography in the area there is a great variation, not only in rainfall and temperature, but in the type of vegetation found. This variation is noticed not only between one island and another, but may vary largely within each island, and while purely tropical crops are found in abundance, especially on the areas of low elevation, sub-tropical and even temperate climate crops can be grown successfully at the higher altitudes.

The land although hilly, is for the most part well watered. Owing to the uneven distribution of the rainfall the vegetation becomes scarce during the end of the dry period, and often causes considerable concern to those raising livestock.

The stock raiser who has ample water all the year around is fortunate indeed, and those who are not so fortunate find it necessary to make provision for storing water in case of drought.

Soil.—Nearly every type of soil is represented in the West Indies, and generally, fertility is not a limiting factor of production. One of the most noticable features in this regard, is the great variation of soils found over a relatively small area, due probably to the fact that with the heavy rains, soils from a number of areas in the hills have been carried down and deposited over the plains near sea level.

Livestock Situation in the West Indies.—While a considerable amount of attention has been directed to the production of livestock in the West Indies, it can be truthfully said that it is, in its present position, a branch of agriculture which has not yet come to be as important as it should. It is at present carried on with the idea of attempting to satisfy the local demand for livestock products, and with few exceptions the industry has not yet reached export proportions. As has already been mentioned the primary consideration of the industry at the present time is to satisfy local demand for livestock products, but even this falls far short of being accomplished, as large amounts of such products is imported annually. The primary reason for the present condition of the livestock industry is that in the past more attention has been paid to the production of crops, than to the production of livestock. There is, however, a definite demand for livestock products, and there is ample room for expansion in this branch of agriculture. The market demands a high quality product, and it must be emphasized that if the industry is to make the gains it should, attention must be paid to systematic improvement, and the product must be of a much higher quality than has been the case in the past.

Health authorities agree that one of the reasons for the high death rate in the West Indies is the lack of proper nutrition, especially in the case of children. The main diet of the native is usually very high in starch, and while the majority of small settlers do keep some livestock, the products are usually offered for sale, and are not used by the people to the extent they should be. In some Islands a movement is under way to have the school children served with milk at the school. While this movement is an admirable one, proper supervision must be given to insure that the milk is produced under sanitary conditions.

The large importation of tinned milk could be reduced, if proper attention is given to the production of good dairy cattle, and the encouragement of dairying along proper lines.



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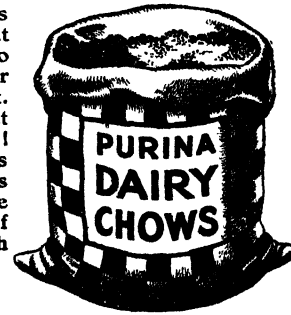
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Cattle.—Cattle are raised in the West Indies mainly for meat, milk and draught purposes. With few exceptions there has been little constructive breeding carried on in the past, with the result that the average run of cattle found at present, contains a great admixture of blood, and does not conform to any definite breed of type.

In the case of beef and draught cattle, probably more has been done due to the fact that these two branches of the cattle industry are closely allied. There has always been a healthy demand for work or draught animals which are usually of the Zebu type (*Bos Indicus*), and consequently more attention has been paid to the breeding of such animals. This type of animal has been found to be most successful for working in the fields, as it is the only animal which will withstand the climatic conditions.

Nearly all the main breeds of dairy cattle are represented in the West Indies, but with few exceptions, mainly the large dairies, the dairy animals are of mixed breeding and low producers. The demand for good dairy cows is large, but the supply is limited. Considering the demand for such animals, and the fact that the dairy industry could expand greatly, this type of cattle has the most promising outlook for the future. More care is required in raising dairy cattle in the tropics, due to the fact that they are affected by the climatic conditions. This, combined with the fact that dairy cattle require more care than other types of cattle, necessitates strict attention being paid to constructive breeding and management, if proper progress is to be made in the dairy industry.

Horsehood.—Due mainly to climatic conditions, the heavy type of draught horse does not find favour in the West Indies, the draught work being done by mules, asses and cattle. The type of horse generally found is of the light type, which are used mainly for riding, driving, polo and racing.

Riding horses are perhaps the most important class, the type of animal most desired is one which will stand up to a good day's work carrying a good weight, and travel at an easy, reasonably fast gait. Where polo is played the horse must be faster and larger than the ordinary riding animal, and is specially bred and trained for the purpose.

Asses are found in large numbers and represent many different breeds, which in most cases have become badly mixed. Strains of nearly every breed are evident, but little if any attempt has been made to keep the animals pure. The ass is used principally as a pack animal, especially in the hills, but is also used to some extent as a draught animal. The ass provides the small settler with a means of transportation, is sure footed in the hills and can carry a good load for its size.

Mules are very important all through the West Indies, and are used for the heavier work for which an ass is too light. The type found is considerably smaller than that found in the Southern United States, due to the use of a small type of jack, on small mares. In some of the Islands attention has been paid to the raising of mules, and large, well boned mules are found. Where such a type of mule is evident, the jack used is usually of the American Mammoth breed.

While there is a good demand for mules with plenty of scale, such demand comes mainly from the large estates, the small settler in the hills preferring a smaller animal. The mule is an excellent animal for nearly every form of transport work, and is not affected by the climate to any extent.

Swine.—While large numbers of pigs are raised in the West Indies, they are mainly raised by the small settler, and little attention has been given to type and breeding, with the result that the type of pig found leaves much to be desired. Little constructive work has been carried on with this class of livestock, despite the fact that it is one which does well, and can be raised at little cost. Pigs are not affected by the climate, and many feeds grown locally can be used to good advantage with this class of livestock. The present tendency is to carry the pig to a much heavier weight than that required to make a good grade of pork.

Sheep.—This class of livestock is not adapted to tropical conditions and on the whole does not do well in the West Indies. While there is a demand for mutton, the quality raised at present is inferior, as little attention is paid to getting the proper finish on the animal before slaughter. Damp conditions, combined with the fact that a number of the common sheep diseases are prevalent, makes sheep raising on a large scale a rather precarious business. In a number of areas some attention has been paid to sheep breeding but the results show that this class of stock is perhaps the most difficult to raise except in the very dry areas, and there trouble is encountered from lack of feed.

Goats.—The goat has rightfully earned the title of "the poor man's cow," in the West Indies, and is found in large numbers. As has been the case in the other classes of livestock, little attention has been paid to constructive breeding, with the result that the majority of animals are very badly mixed as far as breeding is concerned. More attention is paid to raising goats for the meat they produce, and little attention

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is paid to their milk production. The goat does well, especially in the drier areas, requires little attention and feed, and will, if properly bred and cared for, produce a good supply of milk. The males of inferior type should be castrated and used for meat. Goat meat is properly known as chevon, and compares favourably with mutton from sheep.

This class of livestock is one to which more attention should be paid, than has been in the past, as it provides the small settler with a supply of meat and milk at very low cost.

Necessity for Livestock in a balanced Agricultural Programme.—If world conditions are reviewed it will be found that the most successful countries agriculturally, are those which combine judicially the growing of crops and livestock, and it is safe to state that insufficient attention has been paid in the past to livestock in the programme of agriculture in the West Indies. While livestock is an important branch, there is no reason why it should not become more so, but in order to accomplish proper results it will be very necessary to have improvement made along definite lines on a constructive basis. The old system of hit-and-miss is as out of date as the dodo, and should be relegated to the past where it rightfully belongs.

Sound agriculture requires livestock, as without it agriculture soon becomes unbalanced, and commences to decay. A well defined, constructive policy of livestock production is a vital necessity of any agricultural programme, and a prosperous agriculture can only be built with the inclusion of livestock in the programme.

Summary.—It may be said generally that with few exceptions no great attention has been paid to the constructive breeding and production of livestock in the West Indies. There is a strong demand for good livestock, and livestock products, but as little attention has been paid to breeding, the stock on the average, is inferior.

The importations of livestock products is no small item in the West Indies, and the stock raisers would do well to pay attention to the improvement of the livestock grown, if only to supply local market demands. It is quite evident, however, that the products imported are of a high quality, and while the local demand is sufficient to justify an attempt being made to supply it, such products grown locally will have to compare favourably with those imported if progress is to be made. Until stock raisers realize this, little success will attend their efforts in the West Indies, and progress in the industry will be uncertain.

(To be continued.)

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BAMBOOS.

By W. F. Tyler.

As one who has lived for many years in the Far East, where the bamboo is a highly valued product, and where it is tended and cultivated and put to a great variety of uses, it astonished me, on taking up my residence in this Island, to find the insignificant use that is made of it here.

On enquiry I was told that the reason for this non-use was the fact of the bamboo being infested with boring insects which disintegrated it in a very short time. The opinion was, however, expressed that the defect might be due to ignorance as to the time at which it should be cut. Regarding this, some weird opinions were given. One planter maintained that the trouble was that the Jamaica bamboo was of the female species, and that its defects were due to the absence of the male. The solid bamboo to which he referred—from which polo sticks and cavalry lances are made—is of course a separate species—the *dendrocalamus strictus*.

The foreman at Castleton Gardens, a highly intelligent gardener, who, I was told, knew more about bamboos than anyone else in the Island, told me—and, I am sure not as an intended criticism—that the local practice—which he himself followed—was to cut the bamboo two days after full moon and on a dark night. How often that would happen was not referred to. He added that, following that practice, bamboo fences and huts, etc., would last for at least ten years.

Although I have no expert knowledge of the bamboo, I have—apart from my long association with it in China and Japan—communicated on the subject with a scientist at Shanghai, and, in addition, when recently in London, I read up all that was to be found on the subject at the Imperial Institute.

The letter from my scientific friend I have unfortunately mislaid, but the only point of practical interest to me which it contained was that bamboo was cut when four years old. In Japan I have seen stems dated in this connection.

The result of four months study at the Imperial Institute was very meagre, and the notes I took are limited to the following:—

1. The bamboo flowers at long intervals, 30--65 years. Seedlings grow in diameter, whereas rhyzomes spring up full size.

This evidently means that successive shoots from seedlings increase in diameter in the same way that successive shoots from a planted stem-section do so. The rhyzomes of any species vary greatly in size according to climate and soil. It would be of interest to learn the period for full development of the rhyzome from the shoots of a stem-section, presumably ten years or more.

I have twice tried here—and failed—to transplant young shoots cut off as close as possible to the parent stem: a method which I have read somewhere is practicable. In China I planted a grove of *bambusa giganticus* with the roots of full size stems, the latter cut off at six feet. The resulting rhyzomes were full size at the second season.

2. The best time to cut bamboos (in India) is from mid-October to the end of December. Presumably, it is about the same in Jamaica.

3. If bamboo has been in store for six months and shows not more than ten bore nodes in any inter-node, it is considered sound.

This shows the general prevalence of boring beetles and that, considering that bamboo here is cut from clumps crowded with old and decaying stems, and that there is ignorance regarding when to cut them

and at what age, the depredations of borers is only what is to be expected and is no sign that the Jamaican bamboo has any inherent defect.

The only remedy against borers mentioned is to soak the bamboos in water for six months to extract the sugar. In China, bamboo is so soaked, as it is rafted down the rivers and is kept in the water until transported elsehow.

I am told that, apart from the common miniature bamboo, the only species indigenous to the island is the *bambusa vulgaris*. Whether the considerably varying size of it is merely due to age and soil, or whether there may not be a large and smaller kind, seems open to question. Of imported bamboos at Castleton Gardens there were, so far as I gathered, only four. One of these had very long, almost parallel growths of about 1¼ ins. in diameter, which, except at their tops, were devoid of branches. It is one of the species which do not grow in close clumps as its rhyzomes are sent out not close to a parent stem but from creeping roots. It is thus a very easy growth to transplant. This, it is considered, would be a reliable material for furniture making.

It is with regret that I observe that clumps of indigenous bamboo under garden conditions are entirely neglected as regards removal of old and decaying growth. These not only present an eyesore to visitors but is fatal to the producing of good shoots.

Small as is my knowledge of the subject, I venture to make the following suggestions to would-be users of bamboo:—

(a) Select the cleanest clumps, cut out all except this year's and last year's stems, and clean out the dross between them Perhaps, with the advice of the Agricultural Society, use some insecticide Date the stems.

(b) Obviously, the stems should be cut when the sap is least rising, i.e., presumably in the autumn or winter. This year's growth is now—November—nearing completion. Presumably the sap in the older growths is now the least and that this month and October are the most suitable ones for cutting.

(c) As regards the age for cutting. In view of the present infested condition of clumps—however well cleaned—it may be well to cut some at three years old. Experiment in the matter.

(d) Soak the bamboo in water for six months.

(e) After they have been out of the water for another six months examine them for boring holes.

(f) Report the result to the Agricultural Society.

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SEED POTATOES.

By Eric Whitbread.

If a planter heard that a thief was coming in the night to steal half his crop he would take great precautions to see that watch was kept and probably sit up all night to catch him.

This may seem to have little to do with seed potatoes, so an explanation is necessary. For the same planter who would arm himself with a shot-gun to catch a two-legged thief will often plant seed potatoes about whose ancestry he knows nothing and which are probably full of "virus," or degeneration diseases. And the worst thieves of a potato crop are these diseased tubers, which often produce less than the "set" planted.

These "viruses" are very shadowy, and even in Great Britain and America little is actually known of them, except that their influence can always be detected in the growing plant. To the layman they can be explained as something living but so small that they cannot be seen even by the most powerful microscope. But two most important things have been discovered: one is that they are hereditary, and are always passed on to the next generation; and second, that they are transmissible from plant to plant by the agency of green-fly and aphis. Working on these known facts, it has been possible to draw up very rigid regulations in seed potato growing countries, to ensure that stocks are kept up to a recognised standard.

Probably the worst of these diseases is known as "leaf-roll," and diseased plants, as the name suggests, have a distinct "rolling" or folding up of the lower leaves. So when a seed-grower wishes to sell his stock as "certified" he has to commence early in the life of his crop to walk each separate row and pull out all plants shewing signs of this disease. These affected plants, together with the "set," he burns. For he knows that if left the plant will never produce more than half a normal crop, and if these are again planted, they are sure to turn out diseased plants themselves. And it can readily be seen how soon the yield of a whole farm, or district, could be reduced if such seed were propagated. So great importance is attached to this particular form of virus disease that in Ireland if ONE plant in a field is found to be affected the whole field is condemned for seed purposes and can be sold only for consumption.

Other of these diseases are known as Crimple, Streak and several forms of Mosaic. All are recognisable only in the growing plant and all are covered by the regulations. For they are "thieves," and cannot be expected to yield more than 50% to 75% of a normal crop, and all of their progeny will be diseased.

There is an old saying that "drastic diseases need drastic remedies," and the Jamaican planter or small settler would think that he was being very harshly treated if he had a whole field condemned just because one plant was diseased. But it really shows just how serious a view is taken of these virus diseases and how important it is to plant only good seed. Actually the importation of seed into Jamaica is covered by Government regulations and only certified seed can be brought in. A lot of people, however, have the erroneous idea that these regulations are so much Governmental red-tape. Perhaps this short explanation will convince them that this is not the case. For the Irishman, Scotchman, Englishman or Canadian who grows this seed refers to the diseased plants which he pulls out as "rogues." And another name for a rogue is a thief, which exactly describes the virus affected tubers that these strict regulations keep out of your seed barrels.

CITRUS GROWERS LOSING £25,000 A YEAR.

By P. W. MURRAY, Chief Inspector of Produce.

Observance of the two following Citrus Regulations under The Produce Law would, it is estimated, save the industry a matter of £20,000 to £30,000 annually:—

Reg. 2.—No person shall

(a) export, or
(b) offer for export, or
(c) offer knowing the same may be exported, or sell or offer to sell or purchase for export any citrus fruit which are "unmarketable fruit" as defined in Section 26 of Law 19 of 1926.

Reg. 5.—No person shall purchase or sell, or offer to sell or purchase for the purpose of export, citrus fruit which has been gathered from the tree except by

(a) actual count, one for one,
(b) standard field box measurement or half section thereof, or
(c) by actual weight.

Standard field box measurement shall mean a box of two divisions, each division measuring internally, twelve inches wide, thirteen inches deep and fifteen and one-half inches long. Such box shall be filled with fruit level to the sides.

In Regulation 2 it will be noted that it is illegal for anyone to purchase or to sell unmarketable citrus fruit, that is, fruit which is damaged, poor immature or bruised.

Not many weeks ago, a large citrus exporter showed me 600 boxes of fruit which he had rejected out of a purchase of 2,000 boxes, as such fruit was bruised and was therefore unfit for export. Another packing house rejected 1,300 boxes out of 4,000 purchased, for a similar reason. These 1,900 boxes of fruit had cost $1,900.00 delivered at the packing house and was a total loss to the exporters of fruit.

It is clear that if this loss could be prevented, which is quite possible with the exercise of care in the gathering and transport of fruit, that the growers of fruit could demand and would receive at least 1/- increase on every dollar of fruit purchased, which would go directly into the pockets of the growers of fruit.

For years the Produce Inspectors and Agricultural Instructors have, by advice, coercion and prosecution, sought to improve this condition and have in a measure succeeded. There still remains, however, much to be done in this direction, but to accomplish this, the grower must himself co-operate, in that he must observe the regulation requiring the reaping of fruit with clippers and the subsequent careful handling of such fruit. Drivers of trucks must appreciate the fact that fast driving over rough roads, bruises fruit and causes the rejection of such fruit.

Under Regulation 5, it is required that fruit may only be purchased by level field box measure. Both grower and purchaser have departed from this and are selling and purchasing a heaped box instead of a level box of fruit. This is not only contrary to Law, but is directly inducive to the careless gathering of fruit on the part of the grower, and to the acceptance of fruit on the part of the purchaser without examination of such fruit; the idea being that the grower sells fruit in excess of the prescribed measure and the purchaser purchases also in excess, thus making allowance for fruit which is bruised, poor, damaged or immature. As a consequence of this, the grower takes no care in the selection and gathering of his fruit, nor is the buyer interested in the

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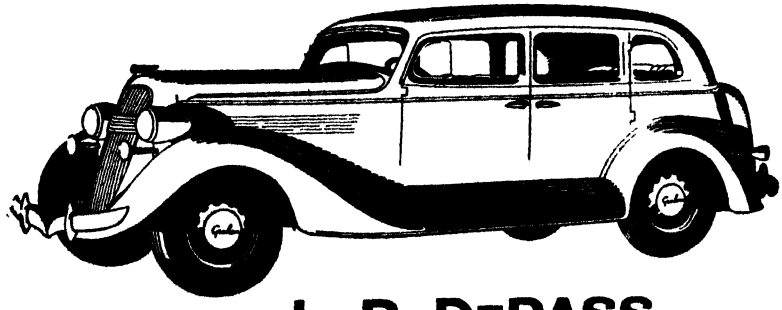
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selection of only marketable fruit when making his purchase. It is clear to all thinking persons that under these conditions, it will only be a short time before the citrus industry of Jamaica will be so ruined and become so unprofitable to all concerned, that it will be impossible for anyone to engage in the industry.

At a meeting held recently at the Agricultural Society's office at which the Secretary of the Agricultural Society was present and the majority of exporters and the Produce Inspectors, this and other matters were discussed, and I laid it down at the close of the meeting that Regulations 2 and 5 of the Citrus Regulations would be enforced both as regards the selling and purchase of fruit, and this was agreed to by all packers present. In spite of this, however, within a week, I was informed that some of the exporters had not observed their agreement and had again departed from the Regulations. I have, therefore, sent, with the approval of the Produce Board, the following circular to all packers of fruit:—

8th November, 1937.

I am directed by the Chairman of the Produce Board, Sir Alfred D'Costa, to draw your attention to the Citrus Regulations governing the quality of fruit.

It is prohibited under Regulation 2 for anyone to purchase or sell knowing the same may be exported, citrus fruit which are unmarketable, that is, bruised, damaged, poor or immature.

In Regulation 5 fruit may only be bought by actual count, one for one, standard field box measurement or half section thereof, or by actual weight. Where fruit is purchased by standard field box, such box shall be filled with fruit level to the sides.

Inspectors of Produce have been instructed to prosecute sellers and buyers who do not observe these Regulations. It is hoped that you will co-operate with the Inspectors in this matter and that it will be unnecessary for them to have to resort to prosecution in order to carry out these Regulations which are intended for the benefit of the buyers and sellers and our citrus export generally.

It appears, however, from reports that I have recently received, that as a result of the purchase by level box, conditions are improving in the reaping of fruit. The buyer now has no margin of volume on which to operate and the seller also has no margin of volume on which to sell, both in their own interests must only buy and sell fruit which is exportable. The grower now receives back his rejected fruit and is in consequence more careful in the reaping of such fruit.

It is the intention of the Produce Inspectors, if it be necessary, to enforce by prosecution, the strict observance of these Regulations.

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INTRODUCTION OF BENEFICIAL INSECTS TO ERADICATE PESTS.

(Mr. W. H. Edwards, Government Entomologist.)

Consequent upon European settlements in the Tropics, active transportation of plants of economic value took place between the different Colonies, and the most striking achievement of agriculturists during the two last centuries has been the establishment of varieties of food and ornamental plants in localities remote from their natural homes where they had remained localized for centuries.

We thus see that in Jamaica, crops which now furnish the wealth of the population and the ornamental plants which adorn our gardens and the countryside, were really all introduced from distant lands.

In the early days of colonization in the tropics, introduction of plants was made on the advice of botanists who had no entomologists or plant pathologists to consult; this has resulted in parasites attached to the plants being carried all over the world, and being introduced in new countries with their host plants.

In Nature every living being is preyed upon by other organisms; if it were otherwise, one or few species of plants or of animals, when they meet favourable conditions to their multiplication, would increase in such numbers as to displace and even annihilate the less hardy species.

Nature has thus arranged, sentimentalists will say by cruel means, that no one species of living beings can under natural conditions, be able to increase without bounds; as soon as a species becomes very numerous its natural enemies, finding an abundant supply of food, also increase in the numbers and an increase in its parasites or predators also follows, with the result that the organism, which by their numbers would become a pest, is brought under natural control. That state of equilibrium between living beings is known as the "*biological balance*,"

Such an ideal condition exists in Nature so long as a natural cataclysm or human activity does not suddenly alter environmental conditions under which the equilibrium had been established

As previously mentioned when transporting plants from one part of the world to others, no precautions were taken to rid them of their parasites; furthermore, in most cases, the animals which preyed upon the pests were left behind. The result has been that insects transported on plants into new countries have there reproduced themselves unchecked, becoming more destructive to crops than they were in their country of origin.

Applied entomology is the youngest branch of agricultural science; though remarkable achievements have been obtained during the last two or three decades, its possibilities with regards to crop production are perhaps only just being realised.

The first attempts made at controlling insect pests were mostly based on the use of poisons. Insecticides are still used, but great achievements have been made with regards to the control of insect pests by protecting and encouraging the multiplication of organisms which attack those pests.

In a restricted sense, the term "*biological control*" designates the check on the multiplication of a pest by its natural enemies.

By introducing in Jamaica the enemies of the major pests which attack our crops we are endeavouring to establish the control of those pests by natural means. If we succeed, these pests will become so reduced in number that they may cause no more economic damage, and planters will not have to spend money and time on their control by artificial means. In making importations of parasitic insects or

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predators into Jamaica, we choose the species of insects amongst those natural enemies which we may say were 'left behind' when the pests were accidentally introduced with their host plants.

The public not conversant with entomological matters sometimes express the fear that the insects we are importing in Jamaica may, after they will have destroyed the pests against which they are introduced, change their habits and themselves begin to attack crops. Such insects are very specialized in their food habits, and there are no more risks of seeing them divert their attention to other kinds of food once their prey had been reduced in numbers, as there are risks of seeing silk-worms attacking bananas if mulberries become scarce, or honey bees feeding on the blood of cattle when flowers are rare.

The writer would be pleased to furnish technical information to those who may be specially interested in the matter.

In Jamaica the first successful attempt in waging war against a destructive pest by means of an introduced natural enemy was made a few years ago when we imported and established a parasite wasp to control the Black Fly which for many years had been a major pest of citrus, coffee, mango and many other economic and ornamental plants.

The complete success met in the control of the Black Fly led to the introduction of another microscopic species of wasp which attacks those scale insects which infest the leaves of pawpaw, citrus, oleander and many other plants.

Since the beginning of the present year the importation of three other species of beneficial insects which did not exist in Jamaica has been undertaken.

One of these is another microscopic wasp which had been discovered on the West Coast of Africa keeping 'thrip pests' under control. Such thrips here commonly attack and cause the withering of the leaves of mango, cocoa and other trees; they also cause ugly scars on the rind of fruits—we hope that these wasps once well established will deal with those pests as effectively as the two former ones have done with their respective hosts.

The second insect being handled is a species of *Coccinellid*, Lady Bird Beetle, which comes from Trinidad and which we are introducing in the Cayman Islands to control the scale insects which have almost annihilated the coconut groves which once flourished in those Islands.

Another recently introduced insect is a predatory beetle which originates from Java and which attacks the Borer pest of bananas. The consignment, shipped from Fiji to San Francisco, was brought by air across the United States to Kingston. The insects arrived in excellent condition and were released in a specially prepared observation plot in St. Andrew.

The remarkable achievements in air transport now makes it thus possible to carry delicate insects at great speed from the antipodes. We believe Jamaica should benefit from modern technique and the facilities afforded by air transport. We intend to increase our activities on such lines and the possibilities of other importations are now under study.

This Department does not only import insects which destroy pests; we also give to others those we have found fulfilling a beneficial role here. Since the beginning of this year we have exported two beneficial species to other countries.

When corresponding with Advertisers, mention the Journal of the
JAMAICA AGRICULTURAL SOCIETY.

ACID WASHING OF SPRAYED OR DUSTED BANANAS.

Instructions for Testing the Strength of the Bath.

Bananas which have been sprayed or dusted with copper sprays or dusts must be washed in a bath of dilute hydrochloric acid before shipment. The dilute acid solution used for the purpose should contain about 0.7 per cent. by weight of acid. The bath may be made by adding 2 gallons of commercial hydrochloric acid to 100 gallons of water. Wooden and not metal vessels should be used.

Washing the fruit tends to decrease the strength of the acid bath and if the decrease is great the washing will be inefficient. It is, therefore, necessary to make frequent tests of the strength of the bath. A simple test has been devised by which any planter can obtain results of sufficient accuracy *provided the instructions are followed exactly.*

Instructions for making the Test.

Requirements:

1. Two small glass bottles each fitted with medicine droppers.
2. A supply of standard sodium bicarbonate solution coloured with methyl orange.

Note.—Suitable bottles with tested medicine droppers and supplies of standard sodium bicarbonate solution may be purchased from the Jamaica Agricultural Society.

Precautions:

1. Use medicine droppers giving the same size drop and be careful that full drops of liquid are used, not air bubbles.
2. Do not interchange the droppers. Keep one dropper for the acid bath and one for the testing solution. Clean the droppers with water after each test.
3. Make at least two tests to avoid possible errors of counting. Count the drops carefully.

Instructions:

1. Count 20 drops of acid bath into a clean vial.
2. Add testing solution 1 drop at a time. Pink colour will first be evident. Add drops until the liquid goes straw coloured.
3. The number of drops of testing solution necessary to make this change denote the strength of the acid. For each .05% of acid 1 drop is necessary. Thus, .5% acid requires 10 drops; .6% requires 11 drops; .7% requires 14 drops, and so on. A fresh acid bath of .72 concentration should require 14 to 15 drops.
4. After washing 200 stems the acid bath should be tested. To bring it up to proper concentration add 1 pint of concentrated acid for every 100 gallons of solution for every drop less than 15. For example, if 12 drops make the change add 3 pints of acid for each 100 gallons of washing solution. Test final solution before washing is commenced. It should require 15 drops to change the colour. If more than 15 drops are required add more water, if less add more acid.

—H.H.C.

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BARKING OF TREES.

By A. P. HANSON, Supervisor of Instructors.

"I think I shall never see
A poem lovely as a tree.
A tree whose hungry mouth is pressed
Against the earth's sweet-flowing breast;
A tree that looks at God all day,
And lifts her leafy arm to pray;

A tree that may in summer wear
A nest of robins in her hair;
Upon whose bosom snow has lain;
Who intimately lives with rain.
Poems are made by fools like me—
But only God can make a tree."

So wrote the poet *Joyce Kilmer*, who appreciated the value of a tree. If we all felt that way about trees, the farming interest of Jamaica would be better off to-day. The sentiment expressed in the lines quoted above is one to be cherished by children as well as adults, for in the destruction of trees, especially from the barking of them, children are well-known offenders.

THE OLDEST TREES.

Many countries boast of their famous trees. The age of Giant Redwood trees of California, as adjudged by the rings of growth in the trunks of some of them which have been felled, has been estimated at some 4,000 years. One of the living trees was found to be 325 feet in height, with a diameter of 30 feet at 4 feet above ground level.

A Cypress tree at Chapultepec in Mexico, is said to be 6,000 years old. A large Dragon tree in Teneriffe is claimed by some persons to be the oldest plant in the world. In Ceylon, under the sacred Bo Trees, natives erect shrines for the offering of prayers. One such tree at Amuradhapura is supposed to be the oldest historical tree known. It was brought as a young plant from India and planted 288 years before the birth of Christ, and is still alive. At Jaffina, in Ceylon, there is a Baobob Tree which is 30 feet in diameter.

THE TALLEST TREES.

It is well known that Australia is the home of various kinds of Eucalyptus trees. Some of these have reached a height of 350 to 400 feet and over. The Douglas Fir of North America grows to a height of 230 feet.

JAMAICAN TREES.

At Malvern, on the crest of the Santa Cruz Mountains in St. Elizabeth, there is a thatch palm, nearly 300 feet in height which serves as a landmark to the boatmen out at sea for miles on the Southern coast of the Island.

Michael Scott in his book entitled Tom Cringle's Log made interesting reference to the large silk cotton tree by the road at Up-Park Camp. More interesting yet is his description of another tree of the same kind near the Ferry Inn on the road to Spanish Town. This latter is the well-known "Tom Cringle's Cotton Tree."

Enemies.

There are numerous pests and diseases that menace the well-being and life of trees. But worse than these enemies are those people who destroy trees by barking them. At the moment, however, we are concerned with diseases of the stem or trunk. W. Nowell, in his book on Diseases of Crop Plants in the Lesser Antilles, mentions Wither-tips, Dieback, Bark-rots, Canker, Gummosis, Wood-rots, and Galls. We have all these diseases in Jamaica, and in addition the evil practice of Tree-Barking, resulting in canker, bark-rot, wood-rot, and ultimately the death of the trees subjected to this barbarous practice.

Many persons think of trees as things for the country and undeveloped places. On the contrary, trees are not only for timber or cabinet woods, but are used as wind-breaks, and to beautify and shade streets, parks, avenues, and sea-coasts. Town residents as well as country residents should be made aware of the value of trees so that they may cherish them.

Barking of Trees.

For some time now our best kinds of timber trees are threatened with extinction. Not only are the trees girdled but they are stripped of their bark up to the branches—nearly always by persons who do not own the trees. This bark they offer for sale in the local markets. It is then boiled and the liquid used as a dye in cleaning house floors.

The practice of barking began with mahogany trees, and as a result, in some districts to-day, these trees are all destroyed. The evil practice continued to spread and when mahogany could not be got, then bullet, fustic, cedar, broadleaf, logwood, wild tamarind, sweet tamarind and others were stripped, and in turn killed.

In connection with the Tree Planting Campaign in St. Andrew the complaints have reached the Officers connected with the scheme that some of the beautiful young trees have been outraged and killed in this way. The writer once stopped to admire a sweet tamarind tree laden with fruits, but on glancing to one side of the trunk, observed that it had been stripped to within a few inches of being completely girdled.

One of the Officers of the Glengoffe Branch of the Society, lost a plot of his bearing coffee, because the large wild-tamarind tree which provided the shade had been stealthily stripped of its bark and killed as a result.

A check has been put to the tide of destruction by special publicity being given through Government Notice calling attention to the provisions of Law 17 of 1929. This Law places the onus on any one found selling or offering bark for sale to prove that he is the owner of the tree, or that he was authorized in writing by the owner to do the business. The penalty attached in case of a violation of this Law is a fine of Ten Pounds, or imprisonment with hard labour for three months.

The Police and Authorised Persons have instructions to prevent the theft of bark of various kinds of trees mentioned in the Schedule to the Law, and to prosecute those found in illegal possession of any bark. Are all members of our Branch Societies aware of this?

"Men of the Trees."

Richard St. Barke Baker, a recent forest officer in Kenya and Southern Nigeria, tells in his absorbing book entitled *Men of the Trees*, how he combated forest destruction by organising into a Brotherhood

a band of African warriors who pledged themselves to save their forests from destruction, and to plant trees everywhere. These were originally men whose tribe had cut and burnt so much forest land that they had fastened to them in the first instance the opprobrium "Forest Destroyers." Under the new Order the members took the following pledge: "I promise before N'Gai (the High God) to do at least one good deed each day, to plant ten trees each year, and to take care of trees everywhere."

In connection with the Order there is a simple initiation ceremony, the members are supplied with badges, and there is a password. These members are the "Men of the Trees." The duty of 'The men of the trees,' " writes the author of the book, "is to guard and protect their woodlands, and to ensure that wherever a tree is cut down or destroyed a new one is planted in its stead. This idea is sufficiently valuable in itself. But beneath it lies the foundation of a much wider ideal embodying the gradual uplifting of the public mind and leading ultimately to the highest standards of citizenship which are essential to the well-being of the world."

These Africans are certainly far ahead of Jamaica in this respect.

TREE PLANTING.

Report by A P. HANSON, Supervisor of Instructors for Eastern Section

On Tree Planting in St. Andrew, I beg to report as follows: (The last Report thereon was dated 14/4/37, and a copy appeared on page 337 of the Society's Journal for June last.)

2. The dry spell referred to in that Report was broken by local showers which began at the close of April, covering wider and wider ground and eventually refreshing the whole area in the form of beautiful Summer Rains.

3. The information to hand concerning the plants last distributed, some of which Mr. Henderson, the local Agricultural Instructor, and myself have inspected, is encouraging The Pine Plants are, however, an exception. Very few have survived. These plants evidently prefer a high altitude no matter how favourable the other conditions.

4. Due partly to more thoughtfulness on the part of many, even among the small farmers, and partly to propaganda work through the Branch Societies, and partly also to discussions on Proclamations made by Government under the Country Fires Law, a somewhat unprecedented check was put to the indiscriminate use of fire during this year's Summer, the season of the year when usually much destruction of property occurred in the past. This is obvious to any eye looking in any direction. Given another ten years' exercise of similar good sense, erosion, infertility and lack of humidity are puny conditions that would be considerably improved.

5. The further publicity given the Prevention Law 1929 (The Sale of the Bark of Trees) continues to deter a number of the evil doers, though there are complaints still.

6. The date fixed for the next Annual Distribution of Plants at Hope Gardens is the 25th of October this year.

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to 40

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NEW 100%
ENGLISH

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"TEN"

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HONEY AND HEALTH.

(By JAS. H. BLACKWOOD.)

These few paragraphs are intended to direct close attention to a valuable source of health which lies even at our very doors, and yet for want of further and deeper local research work and more faith in the experience of humble men, many live and die unaffected by "I pray that in all things thou mayest prosper and be in health," and—"eat thou honey, for it is good."

This valuable source of health is HONEY, "the most wholesome of all sweets," a product of BEES, "the most useful of all insects." All regular users of honey recognise that the daily honey eating habit ensures radiant health, because honey contains ingredients for body, bone and teeth building.

Sir John Russell, Director of the Rothamstead Experimental Station, at the opening of the British Beekeepers' Association, just about a year ago, said that honey supplied the essences of flowers that no other food to-day contained: that in olden days all kinds of teas and wines were made from flowers. Consequently the faithful users of honey enjoy a safe, health-sustaining, natural, uncooked food.

Dr. Haines, chief chemist of California Honey Commodities Company states: "In my laborious hours of research I have found honey contain more of these vitamins—A. B. C. E. F.—that are the sources of health, energy and vitality than any other food I have ever come in contact with."

I, therefore, take this opportunity to advocate *the daily eating of honey* by all Jamaicans. The result will be robust health, good digestion and sustained enthusiasm. May I emphasise too, that the dining table should be the centre of attraction for much-home-honey-consumption, while the dining room should be the place where a healthy attitude toward the daily honey eating habit should be created.

HONEY AS HEALTH RESTORER AND HEALTH GIVER.

A lad had a considerably bloated body, indicative of dropsy. An old Doctor suggested the following remedy: "twenty to thirty bees in a bottle with alcohol, removing the bees after two days." The remedy when applied according to the Doctor's instruction restored the patient nearly to normalcy within a fortnight.

While I hesitate to recommend this remedy, I do hold, and my views are substantiated by men of science, that honey possesses to a remarkable degree, extraordinary health-giving and restorative properties.

May Jamaicans look forward to the day when our housewives will put the honey jar on the table along with the dishes, knives, forks, spoons, butter, and other requisites.

RECIPE FOR HONEY WHOLEWHEAT COOKIES:

Take two-thirds cup snow flake; three-fourths cup honey; two eggs; 3 cups wholewheat flour; ½ teaspoon salt; 1½ teaspoons Fleischman's

baking powder. Cream the snowflake, add honey, wholewheat flour, beaten eggs, and other ingredients. Bake in a hot oven for 15 minutes.

(*From American Bee Journal, September*, 1937.)

Honey Cheese Muffins.

Cold snappy days seem to call for fluffy, golden-brown muffins with our oven dinners. Whether you choose the plain or cheese muffins you can be sure they will be hailed with delight by family or guests if you serve them piping hot with plenty of butter and honey.

Plain Muffins.

2 cups white flour
2 tablespoons honey
4 teaspoons baking powder
1½ teaspoons salt
1 egg
1 cup milk
3 tablespoons butter

Mix and sift flour, baking powder and salt. Add honey to beaten egg, combine and mix only enough to blend. Add melted butter. Bake in greased muffin pans in a hot oven, 400 degrees, 20 to 25 minutes.

Cheese Muffins.

1 egg
½ cup honey
2 cups flour
1 cup sweet milk
2 teaspoons baking powder
½ teaspoon soda
1 teaspoon ginger
½ cup grated cheese

Beat egg very light, add honey and milk. Combine and sift dry ingredients together. Stir into egg mixture and add grated cheese, mixing only enough to combine. Bake in greased muffin tins, at 400 degrees, for 20 minutes.

Snow Candy.

2 cups crystalized honey
2 cups grated cocoanut
¼ pound almonds
1 teaspoon vanilla

Knead the cocoanut into the honey until it can be handled without being sticky. Then roll into balls about the size of a walnut, with an almond in the centre. Roll each ball into more cocoanut—then place one almond on top. Place in refrigerator before using.

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A NEW NESTLÉ'S PRODUCT

DRINK MILO AND MILK HOT OR COLD

REGULATIONS GOVERNING THE EXPORTATION OF VEGETABLES AND FRUITS.

(*The Jamaica Gazette, Sept.* 23, 1937.)

1. No person shall export any of the vegetables or fruits mentioned in the Schedule hereto unless such vegetables or fruits are packed at the Low Temperature and Marketing Experiment Station of the Department of Science and Agriculture or at a packing house controlled by the Marketing Division of that Department

2. An Inspector of Produce performing the duties of the Development and Marketing Officer (hereinafter called "the Officer") in consultation with the Advisory Board appointed under the Agricultural Produce Law 1926, or the Chairman of the said Board, shall regulate the quantities of any of the said vegetables or fruits which may be exported to any country during any specified period, and all persons desiring to make shipments shall apply to the Officer for permission to make such shipments at least seven days prior to the proposed day of export.

3. No person shall gather, collect, transport to a packing house for the purpose of exportation, or export any of the said vegetables and fruits except in such manner and in such containers as may be approved by an Inspector of Produce, and all containers for export shall be labelled, tagged or marked in such manner as may be required by the Officer.

4. No person shall export any of the said vegetables and fruits unless the same are of such standard of size and quality as in the opinion of an Inspector of Produce is suitable for export.

5. These regulations shall not apply to bona fide ships' stores or consignments not exceeding five crates or packages shipped for private purposes and not for sale in the country of destination.

SCHEDULE

Tomatoes	Tree Tomatoes
Eggplants	Avocado Pears
Peppers of all kinds	Carrots
Fresh Beans and Pea	Beetroot
Melons of all kinds	Turnips
Squash, Cucumbers.	Radishes
Vegetable Marrows	Pineapples
Potatoes of all kinds	Passion Fruit
Mangoes	Granadillas

Made in Privy Council this Fourteenth day of September, 1937.

EDWARD DENHAM,
Governor.

WARNING TO CANE CULTIVATORS.

(*The Jamaica Gazette, Sept.* 23, 1937.)

Under the International Sugar Agreement the Colony's exports of sugar for the next five years, commencing 1st September, 1937, will be subject to regulations and restrictions. The Export quota for 1937-38 has been fixed at 86,000 tons. This quota is liable to alteration from year to year. It is proposed that the total Island production of sugar for 1937-38 shall be 120,000 tons. Of this amount 86,000 tons will be

for export, 18,000 tons for local consumption and 21,000 tons reserve stock.

Owners of Sugar factories have announced that they are prepared to purchase during the 1937-38 crop all canes offered by Cane Cultivators, provided such canes are of the standard of fitness and of the varieties hitherto accepted by each factory, and subject to the usual conditions as to time and place of delivery.

Each factory will be given before the crop starts a quantity of sugar to make, and therefore arrangements will have to be made so that it is known before crop starts to which factory each cultivator will deliver his canes. Arrangements for this will be announced later.

Furthermore, it is considered highly important that Cane Cultivators should realise that next year's crop of 120,000 tons sugar includes 21,000 tons sugar more than the Export Quota and what is used in the Island. This reserve quantity of 21,000 tons can only be shipped by counting it against the following year's crop, and if the Export Quotas allowed by the International Sugar Agreement are not increased year by year this large amount will have to be worked off year by year during the next five years. This means that unless the Export Quota is increased, Jamaica will not be allowed to make as much sugar in 1938-39 and the following years as it is about to make in 1937-38. Therefore, if no increase of the Export Quota comes about, restriction of cane production both by factories and cultivators will be necessary; and in that case, factories will not be able to take all Cultivators' canes year after year, even if their production remains at the level of 1937-38. If Cane Cultivators increase their output, the factories will be even less able to take all that is produced.

In view of the possibility of the Factories being unable to take all the Cultivators' Canes regardless of quantity in 1938-39 and the following years, Cultivators are warned against extending their areas of cane or increasing their production. It is only if the Export Quota is increased year by year that factories and cultivators will be able to grow more canes. At present nobody can tell whether the Export Quotas are going to be increased or not, so it is not advisable to take the risk of extending cane cultivation. Cultivators who are not growing cane at present are warned not to begin growing cane now because there is little or no chance of their being able to dispose of such cane to factories.

F. L. BROWN,
Acting Colonial Secretary,
28th August, 1937.

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MARLIE HILL JUVENILE VEGETABLE COMPETITION.

It is with pleasure and great satisfaction that I report on the Marlie Hill Juvenile Vegetable Growing Competition for 1937.

The project has maintained all previous years records, while still advancing numerically and agriculturally, becoming as it were epidemic in the districts. Nearly 200 plots were established, of which 100 odd actually competed. The project is no longer experimental, but is regarded as a very lucrative commercial proposition. Quite as many vegetable plots are being maintained by adults which spells prosperity. As reward sweetens labour, great zeal and effort is evinced.

Marketing has been one of the special features for the season, correct methods of harvesting, handling and packing received special attention. Local markets were readily procured at Old Harbour, Spanish Town and Kingston for all products, while a shipment of carrots, peppers and egg-plants produced for export by the senior boys was carried out with success through the Low Temperature Station of the Department of Agriculture.

Small Stock has become one of the partners in this great Juvenile Agricultural Development. Some Juveniles have purchased from savings, goats, pigs, poultry, rabbits, while others are saving to purchase cows.

Controlling of pests, establishing permanent crops, budding, grafting, forking, mulching, trenching, manuring have all been maintained, while artificial manures have continued to be used with success. Generally speaking this Competition has been a thorough success from every angle.

Mr. J. L. Thompson, the Headmaster of the Marlie Hill School, under whose care this project has developed with such success deserved much more credit than can be given in this Report. His effort this year in creating a Savings and Marketing Department for his Juveniles deserves the highest praise possible. While agricultural projects continue to be of primary importance, Mr. Thompson nevertheless finds a place for new vocational items each year as reflected at his Juvenile Exhibitions. Special mention must also be made of his able lieutenants (the senior boys) who guided operations during his absence in England.

The following is a list of the Prize Winners:—

Name	Class.	Fence.	Alignment.	Variety.	Manures.	Tillage.	Effort.	Total.	Prize.
Maximum Marks			...		...		...	200	
Robert and Claudius Bailey ...	A	9½	18	40	48	40	18½	172	1st
Mortimer Blake	A	9½	17	42	46	38½	19	172	1st
Robert and Lorenza Parker ...	A	9	16	38	44	36	18	161	2nd
Reuben Osbourne	A	8½	16	38	42	36	17½	158	3rd
"B" Senior Boys in School.									
Richard Bailey	B	9	17	38	46	40	18	168	1st
Harbin Thompson	B	8½	16½	37	44	38	17	161	2nd
Thomas Palmer	B	8	17	36	44	39	17	161	3rd

"C" Junior Boys in School.

Stanley Henry	..	...	C	9	17	42	40	39	19	166	1st
Manasseh Bailey	..	...	C	9	16	35	36	40	16	152	2nd
Thaddeus Bailey	...	...	C	—	17	40	37	42	16	152	3rd

Class "D" Girls out of School.

Nerisse Thomas	...	..	D	9	18	48	38	43	19	167	1st
Stephanne Cross	...	...	D	8	17	36	35	42	18	156	2nd
Lucille Wallace	..	...	D	—	16	35	34	40	18	143	3rd

Class "E" Girls in School.

Reletta Leachman		...	E	9	18	42	38	44	19	170	1st
Ruby May Henry	..	...	E	9	17	40	37	42	19	164	2nd
Myrtle McCalla	...	...	E	8	16	38	35	40	18	150	3rd

Class "F."

Iris Hayden	...	...	F	8	12	40	35	35	15	140	1st
Alsom no Bailey	.	..	F	—	11	42	35	33	13	134	2nd
Doris King	...	..	F	8	12	40	30	28	12	125	3rd

(Sgd.) Clarence Byles,
Instructor and Judge.

THE BANANA.

The following essay on the banana, written in English by a Japanese boy, was published in a Malay newspaper:

"The banana are great remarkable fruit. He are constructed in the same architectural style as sausage, difference being skin of sausage are habitually consumed, while it is not advisable to eat wrapping of banana. The banana are held aloft while consuming, sausages are usually left in reclining position. Sausage depend for creation on human being or stuffing machine, while banana are Pristine Product of honourable mother nature. In case of sausage, both conclusion are attached to other sausage; banana, on other hands, are attached to one end to stem and opposite termination entirely loose. Finally banana are strictly of vegetable kingdom, while affiliation of sausage often undecided."

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MARKETING NOTES.

Extract from Monthly Reports on the Produce Markets (31st August, 1937) by Gillespie Bros. & Co., Ltd., London.

PIMENTO.—During the past month the market has been more active, and prices are considerably dearer. Early in the period there were some "short" covering purchases by speculators which tended to stiffen the quotations, while the granting of import licenses in Germany on a more liberal scale caused an improved demand from that quarter. We close at the highest point of the month, 72/- c.i.f being now quoted for September shipment. The spot market is also dearer, fair quality being to-day worth 8d. per lb.

London Stock at 28th Aug.: 557 *Bags* against 1,057 *Bags* in 1936.

HONEY.—The market has become firmer and more interest has been shewn in Jamaica on the spot. A fair quantity of slightly out-of-condition and sugary was disposed of at 34/- per cwt., and we quote for sound quality 35/- to 47/6d. for dark liquid to fine pale set. There seems to be now a comparative shortage of the article and with the approach of colder weather we anticipate a better demand from Dealers very shortly.

BEESWAX.—Jamaica is in quiet demand. We quote £6 per cwt. as present value.

GET MORE WORK DONE

with fewer animals

by fitting

Goodyear Cart and Waggon Tyres

YOU CAN HAUL MORE LOADS ON PNEUMATIC TYRES.

LET US SERVE YOU.

GOODYEAR

Use BRILLO....

The Perfect Cleanser for Dairy Utensils

as well as for Pots, Stoves, Sinks, Mirrors, Cutlery, etc.

BRILLO cleans, scours and polishes in one operation.

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Every day more and more thrifty shoppers are discovering that it saves to spend at this modern, considerate shop, where there is everything to wear for men, women and children!

Shop at THE

ENTERPRISE

Where the price is "less - than - elsewhere."

NOTES ON KOLA, (Cola Acuminata) BISSY, COLA.

By E. N. RICHARDS, Assistant D.I.C.

The seed is said to be chewed by African natives to promote digestion. It is also used medicinally, and is said to render putrid water wholesome. The seeds are sometimes ground and made into a drink like cocoa. They are said to be of great dietetic value, and also to be useful in dyspepsia and nervous disorders. It has been said that the beverage made with Cola paste is ten times more nutritious than chocolate made with cocoa. The reputation of this substance in sustaining the system against fatigue is such that it is meeting with consideration from the military authorities of the world as an article to be given to soldiers during active service. Its qualities appear to be derived from the caffeine it contains, some authorities stating that it contains as much as 2 per cent. of caffeine.

TURNIPS.

Here is a hint to growers of turnips.

When healthy turnip seedlings have taken root put a thick layer of decayed leaves over the bed and around the roots of the plants so that only the tops are left out. This simple contrivance has contributed to the production of very large turnips.

H. S. MANAHAN,
Clonmel P.O.

ORDER re LAW 4 OF 1909.

(*The Law relating to Authorized Persons.*)

"I, the Governor in Privy Council in exercise of the power conferred by Section 1 of Law 4 of 1909 (hereinafter called "the said Law") and of every other power hereunto enabling do hereby add to Schedule A to the said Law the articles of agricultural produce set out in the list hereto subjoined.

Made in Privy Council this Fourteenth day of September, 1937."

EDWARD DENHAM,
Governor.

Tomatoes.
Sweet Peppers.

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BRANCH NOTES.

All Reports received are acknowledged in this section of the Journal. This month we have only been able to put in print Notes from Branches who have not yet had a publication for this year.

Branch Secretaries should **write on one side of the paper only.**

Ed.

WESTMORELAND : Williamsfield.—Meeting held 9th September. Present were : The President, Mr. C. E. Thompson, Instructor Kelly, and others. The time of meetings was changed from the second Thursday of each month to the fourth Monday. Resolution was drafted re the No. 11 St. Peter's Road, and the establishment of a lock-up dispensary at Williamsfield. Instructor Kelly gave an address in which he advised the planting of subsidiary crops such as coffee and cocoa. He read an extract from a Journal of the J.A.S., "Banana for food," and advised the members to eat more Bananas. Authorised Persons reported no arrests. The President made his closing remarks and the meeting was brought to its close by the singing of the National Anthem.

S. M. BROOKES,
Secretary.

Glen Islay P.O.

Haddo.—Meeting held 5th Sept. Mr. J. A. Stewart (President), Instructor Kelly, and many others were present. The Secretary read letters from Director of Medical Services re appointment of nurse at Ramble. The acquisition of a ram was the chief topic of discussion. Instructor Kelly was thanked for his efforts. Mr. T. Stewart was appointed keeper. A committee was appointed to deal with the keeping and caring of the ram. Mr. O. Black reported on the Half-Yearly Meeting in June. The report was instructive and encouraging. An Address was read and a presentation made to Teacher D. N. Henry who was severing his connection with the Branch. Mr. Henry replied suitably. Meeting closed by the singing of the National Anthem.

O. A. BLACK,
Secretary.

Ramble P.O.

Beeston Spring.—Meeting held 27.8.37. Present: 7 members, a few visitors and the Instructor. The Instructor gave an instructive address on Nutrition, for which he was thanked. Arrangements were made to stage an Agricultural Play and to have addresses given by a few local agriculturists with the object of seeking to interest people of the district in the Agricultural Society. After minor matters were attended to the meeting was brought to a close with singing of the National Anthem.

(Mrs.) M. W. FLETCHER,
Newmarket P.O. Secretary.

Caledonia.—Meeting held 24th Aug. Present: The President, Mr. N. A. Grey, Instructor Kelly and several members and visitors. The President advised members to adopt the best possible methods in cultivation in order to secure good results. Mr. Maxwell who had been appointed an A.P. reported that he had received the necessary equipment from the Police. It was proposed to have a debate at the next meeting. Extracts from the Journals were read by the Instructor. He gave an address on Banana Culture and advised that the soil should be properly prepared before planting. Panama Disease and Borers should be guarded against. After the payment of dues, the singing of "The King" brought the meeting to a close.

(Miss) I. VIC. MCPHERSON,
Darliston P.O. Secretary.

ST. THOMAS: Middleton.—Meeting held 15.9.37. Present: Mr. T. C. Creightney (Pres.), 5 members and 4 visitors. The President emphasized the value of manure, and told how a Panama Diseased area ought to be treated. The question of a "lock-up" for unsold goods at the Morant Bay market was taken up. Members agreed to send a petition to the next Half-Yearly meeting of the Associated Branches. It was also suggested that meat stalls in the market should be protected with mesh wire; this also to be dealt with in a petition to the Associated Branches. It was decided that the members of the Parochial Board for the No. 2 Division be invited to the next meeting of the Branch. The meeting ended with "The King."

W. A. THOMPSON,
Spring Garden P.O. Secretary.

ST. MARY: Wallingford.—Meeting held 10th Sept., with Mr. Malcolm Taylor, President, in the chair. As matters arising out of the minutes, a discussion followed with a view to deciding whether a coffee pulper, a boar, or a goat should be bought for the members of the Branch. A vote was taken and the decision was for the purchase of a goat. There was a musical programme to which the Juveniles contributed. Instructor Coke, Messrs. Tim Burke, Victor Bailey, and Henry (visitors) gave encouraging speeches. The Instructor's address was on the Goat, its care and usefulness. Mr. C. L. A. Stuart also spoke. The Roll Call showed ten members in attendance. There were also twelve visitors and many juveniles present. The singing of the National Anthem closed the meeting.

JAS. S. LAING,
Guy's Hill P.O. Secretary.

Long Road.—Meeting held 20th Sept. There were present: the President, Instructor, 16 members, 8 visitors and Mr. A. A. Constable, M.P.B. Letter from Parochial Board, St. Mary re District Maternity Nurse, was discussed. The Instructor addressed

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Principles of Agriculture—Bailey	...	...	10/6

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the meeting on Minor Products, i.e., Corn, Ginger, Irish Potato. He was thanked. The Secretary was instructed to write to the Parochial Board re Water Supply for the district. Other matters were dealt with and the meeting adjourned.

R. M. HIRD,
Secretary.

Enfield P.O.

Job's Hill.—Meeting held 10th Sept. Mr. J. Hogg presided. Present were: Instructor Jones, 7 members and 2 visitors. Mr. D. Walker exhibited a tomato of extraordinary size. The Instructor spoke briefly on the cultivation of pine apples and vegetables for export. Members were urged to increase the membership of the Branch. The Instructor impressed on the meeting that it is important that members should attend demonstrations. The meeting closed with the National Anthem.

R. S. OWEN,
Secretary.

Mt. Regale P.O.

Highgate.—Meeting held 8th September. The Instructor, Mr. D. A. Jones, and several members attended. Mr. C. L. Belnavis, 1st V.-P. presided. Resignation of the Secretary was very much regretted. W. Page, Authorised Person, reported "all correct." Instructor D. A. Jones gave an address. He encouraged the planting of pine apples, especially in parts infested with Panama Disease. The Chairman thanked the Instructor for his address. The meeting was brought to a close with the singing of the National Anthem.

J. H. HUNTER,
Assistant Secretary.

Highgate P.O.

Flint River.—Meeting held 9th Sept. Present: N. A. Jacks, President, 12 members and Instructor Jones. Prizes were distributed to members of the Juvenile Branch for products of their vegetable gardens as follows:—1st Prize to Master Woodrow Turner for the best yam; 1st Prize to Miss Pearline Shaw for sweet pepper weighing half-pound. The Secretary was requested to send circulars to the Authorised Persons asking them to attend the Branch meetings more regularly. The Instructor gave a splendid address and encouraged the members to cultivate the plot they had begun so splendidly. The meeting terminated with the singing of the National Anthem.

(Miss) M. R. DAWKINS,
Assistant Secretary.

Troja P.O.

ST. ELIZABETH: Springfield.—Meeting held 3rd Sept. Eight members were present. The 1st V.-P., Mr. Lynford Black, presided. Among matters arising from the minutes was a reply to a Petition which the M.L.C. for the parish had forwarded to His Excellency the Governor from the taxpayers of Springfield. His Excellency promised to visit Springfield at a later date. The Authorized Persons reported "all correct." Minor matters were dealt with, and after planning an agenda for the next meeting the meeting was brought to a close with the singing of the National Anthem.

U. K. WALTERS,
Secretary.

Springfield P.O.

Fyffe's Pen.—Meeting held 9th Sept. Present were: Mr. C. B. Miller, 1st V.-P. presiding, 19 other members and a few visitors. The Secretary read a letter from the Parent Society relative to the affiliation of the Branch, and supply of Journals. Apology for absence was submitted on behalf of the Instructor. The Treasurer gave a financial statement. Two new members were enrolled. Mr. C. B. Miller placed before the meeting the correspondence he had had with the St. Elizabeth Parochial Board re the proposed Forest Mtn.—Hampstead road. The meeting decided to forego further discussion on the matter until the next meeting. The Treasurer urged members to attend meetings punctually. On the suggestion of the Secretary it was decided that at the next meeting there should be a debate, viz., Resolved that pig-rearing is more beneficial to the small settler than goat-rearing. The meeting adjourned with the singing of the National Anthem.

L. H. E. REID,
Secretary.

Fyffes Pen P.O.

When corresponding with Advertisers, mention the Journal of the
JAMAICA AGRICULTURAL SOCIETY.

ST. CATHERINE : Princessfield.—Meeting held 30th Aug. There were present : the Chairman, Foreman Francis, and other members. Routine matters were carried through. An Authorized Person reported a case of unlawful possession of coconuts. The roll was called and after minor matters were discussed the meeting terminated by the singing of the National Anthem.

P. G. C. GRAHAM,
Secretary.

Bog Walk P.O.

Buxton Town.—Meeting held 15.9.37. There were present : Mr. N. H. Mullings, 1st Vice-President, Instructor Byles, 11 other members and 17 visitors. The Chairman welcomed the audience and extended the courtesy of the floor to the visitors. As arising from the minutes, the matter of a Demonstration Plot in conjunction with the Branch was discussed. Correspondence was dealt with. The Authorised Persons gave their reports. The Instructor gave a very interesting address on the "Culture of Tobacco." Besides dealing with the growing of tobacco, he read, as a prelude to his address, the history of the plant. He also spoke on its commercial value. Before the Roll Call two new members were enrolled. The singing of "The King" terminated an interesting meeting.

H. G. A. WHITE,
Secretary.

Linstead P.O.

Glengoffe.—Meeting held 7.9.37. Present : Alex. Carey, Esq., J.P., presiding; A. P. Hanson, Esq., Supervisor; several members and visitors. Business : (a) Plans for celebrating 35th Anniversary of Branch; (b) Plans for increasing membership of Branch; (c) Address by Supervisor on Suggestions for using up lands left vacant by Panama Disease; (d) Enrolling of 4 new members; (e) Discussion on Coffee, Cocoa, and Corn. The National Anthem.

AUSTIN C. PINE,
Secretary.

Glengoffe P.O.

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ST. ANN : Walker's Wood.--Meeting held 6th Sept. There were 10 members present. The President, Mr. George Perkins, welcomed everyone, especially Instructor C. V. Atkinson. Instructor Atkinson observed that something should be done to increase the membership and sustain interest. The matter of the local Show to be held at Exchange on Easter Monday, 1938, was discussed. Mr. C. A. F. Stewart, K.V.P., offered a prize of £1 for pears as follows : 1st prize, 5/- for green, 5/- for black pears; 2nd prize, 3/- for green, 3/- for black pears; 3rd prize, 2/- for green, 2/- for black pears. With regard to the White Yam Competition in East St. Ann, the meeting directed the Secretary to write to the Secretary of the Parent Society with a view to finding markets when these yams shall have come in next year. Instructor Atkinson addressed the meeting on "Manures." He encouraged the rearing of small stock, especially because of manures they produced. A vote of thanks was accorded the speaker. Subsequently Mr. Stewart was thanked for the White Peas and the Irish Potatoes he gave certain of the members who reported on the results they had. The National Anthem terminated the meeting.

C. M. AUGUSTUS SIMMONDS,
Walker's Wood P.O. Secretary.

ST. ANDREW : Lawrence Tavern.—Meeting held 21st Sept. Instructor Henderson spent the day in the district visiting holdings. In the afternoon he visited the Lawrence Tavern Government School and reorganised the Juvenile Branch. 56 members were enrolled. The Instructor attended the meeting of the Branch Society and gave a very instructive lecture on "Banana Culture." Several questions were asked and were satisfactorily answered by the Instructor. Four new members were enrolled.

(Miss) C. E. JOHNSON,
Lawrence Tavern P.O. Secretary.

PORTLAND : Rock Hall.—Meeting held September 14. Present : Mr. R. N. Scott (1st Vice-President), Instructor Graham, 9 members and one visitor. The Branch agreed to support the Central Portland Branch in its efforts to have a vaccination centre at Mt. Pleasant. The Instructor delivered a practical and interesting address on minor products, and he was accorded a vote of thanks. The Authorized Persons reported "all correct." Minor matters were discussed and the meeting adjourned with the singing of the National Anthem.

L. J. MORGAN,
St. Margaret's Bay P.O. Secretary.

Fair Prospect.—Meeting held 20th Sept. Present were : Mr. J. C. Burke, Vice-President in the chair, Instructor G. R. Graham, 10 members and 1 visitor. It was decided to hold a concert in the schoolroom early in the month of December. A committee was appointed to make the necessary arrangements and report to the next meeting . One Authorized Person gave his report. The Secretary was instructed to send circulars to the other Authorized Persons pointing out the necessity of attending the monthly meetings. One member who enquired regarding fertilizer for certain vegetables was advised to purchase the same from the Society's Office in Kingston. The Instructor gave a list of the Branches in the parish with the number of members registered in each, and requested that all the members should pay in their fees and get registered as the rules required that there should be at least 20 members for each Branch. It was decided to make a special effort to collect fees. The Roll was called and the meeting adjourned with the singing of the National Anthem.

M. A. BARRETT,
P.M. River P.O. Secretary.

MANCHESTER : Royal Flat.—Meeting held 9th September. Present : N. Nash. Esq., President, Instructor H. A. Darby, and a few other members and visitors. The Instructor lectured on Panama Disease. Preparations were started for a corn-growing competition in the Spring of 1938. The question of prizes was fully discussed, and the Secretary instructed to act. The matter of Sweet Potatoes for export was also mentioned and it was decided to keep up the interest of the proper authorities by correspondence. Minor matters were dealt with and the meeting adjourned.

H. LISTER JOHNSON,
Williamsfield P.O. Secretary.

Victoria Town.—Meeting held 21st Sept. Present were : Rev. J. W. Grant, in the chair, Instructor Darby, and 8 members. It was decided that a resolution of condolence be sent to Mrs. Cradwick relative to the death of her late husband, Mr. W. Cradwick. The Instructor advised regarding Citrus and also the sale of Pimento leaves. He suggested that the Branch consider ways and means of purchasing a sprayer. The members all agreed to this. The National Anthem brought the meeting to a close.

(Miss) L. A. ALLEN,
Victoria Town P.O. Secretary.

HANOVER : Sandy Bay.—Meeting held 7th Sept. There were present Instructor C. C. Hastings, 8 members and 1 visitor. Mr. J. B. Lawrence presided. Those who helped to make the meeting of the Hanover Branches Associated at Sandy Bay a successful one were thanked for their kind services. A committee to make arrangements for a farewell function in connection with the approaching departure of the Secretary of the Branch was appointed. Instructor Hastings gave a very instructive and able address on "Panama Disease." Mr. W. H. deLisser, J.P., of Kenilworth also gave his experience. After minor matters had been dealt with the meeting terminated with the singing of the National Anthem.

R. GEO. DINHAM,
Sandy Bay P.O. Secretary.

CLARENDON : Arthur's Seat.—Meeting held 3.9.37. Present : Instructor Shirley and 15 members. Two resolutions re Parochial Roads were brought forward. Date for the inaugural meeting was fixed. The Instructor gave an address on "Cultivation of the Banana."

(Miss) O. G. WILSON.
Croft's Hill P.O. Secretary.

Beckford Kraal.—Meeting held 6th Sept. The Instructor gave an address on "Bananas." He warned members to treat Panama Disease according to the directions from Government. The Instructor's address was listened to with attention and he was accorded a hearty vote of thanks. A.Ps'. reports and minor matters dealt with. The meeting terminated with the singing of the National Anthem.

T. B. REEVES,
Beckford Kraal. Secretary.

Mt. Airey.—Meeting held 14.9.37. Present : The 1st Vice-President and Mr. C. S. A. Edwards, Instructor Virtue, twenty-two members and a number of visitors. Arising out of the minutes the Social and Literary Club was discussed. It was suggested that the Club be combined with the Parent Teachers Association. The Juvenile Branch had its first meeting on that day. The Instructor gave a stirring address on the value

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of vegetables. He was thanked. Mr. C. S. A. Edwards, delegate to the recent Half Yearly General Meeting, gave a full report. Miss L. Falconer rendered a recitation for which she was thanked. Mr. C. Wilson gave a short address. Minor matters were dealt with and the singing of "The King" brought the meeting to a close.

M. E. A. DAWKINS,
Secretary.

Richmond Park P.O.

OTHER REPORTS RECEIVED.

Branch and Secretary.	Date of Meeting.	Attendance.	Business.
Clarendon.			
Sunbury .. (N. G. Knight)	14.9.37	over 110	Road. Domestic matters.
Portland—			
Bybrook . (J. V. Watson)	9.9 37	20	Report of A. P. Domestic matters.
Breastworks . (L. F. Ergas)	10 9.37	17	Routine matters.
Mahoe .. (J. O. Grant)	16.9.37	24	Correspondence. Report of A.P.
St. Andrew—			
Westphalia . (Asariah Campbell)	22 9 37	12	Coffee situation. Road. Country Fires Law.
St. James—			
Adelphi .. (A. B. McKenzie)	14 9 37		Tobacco. Domestic matters.
Orange . (E. S. Anglin)	26.8.37	Over 18	Water supply. Report of delegate to Half-yearly Meeting. Post Office Social.
St. Mary—			
Epsom . (F. A. Edwards)	1 9 37	44	Water supply. Address by Instructor Jones. Country Fires Law.
St. Mary—			
Hampstead .. (C. E. Nicholson)	16 9.37	12	Report of delegate to Half-yearly meeting. Banana Resuscitation Scheme.
Richmond . (S. A. Officer)	24.9.37	38	Ram. Report of A Ps. Address by Supervisor Hanson.
St. Thomas—			
Hagley Gap (J. M. N. Grant)	27.8 37		Roads. Water supply. Seed potatoes.
Golden Grove . (David Dixon)	15 9.37	22	Correspondence. Water supply. Market.
Pear Tree River .. (V. R. McLean)	14 6.37		Routine matters.
Do.	5 7.37	14	Report of A.P. Address by Mr. Robinson.
Do.	13.7.37		Fingerposts. Domestic matters.
Do. ..	2 8.37	Over 7	Report of A.P. Routine matters.
Do. ..	13.9.37	Over 9	Veg. seeds. Routine matters.
Westmoreland—			
Cairn Curran .. (Miss P. Hemming)	12.9.37	20	Address by President. Bananas.

Department of Agriculture.

POSTAGE.—Postage on all communications addressed to the Superintendent of Public Gardens, Hope Gardens, Kingston P.O., must be prepaid.

REMITTANCES.—The full value of all orders must be prepaid. In making payments, cheques and postal orders should be made payable to the Director of Agriculture and crossed Bank of Nova Scotia. Postage stamps are accepted only for smaller amounts than 6d.

COST OF BOXES.—The costs of boxes used in packing plants will be added to each account at the following rates:—

Up to	7	plants	6d.
"	20	"	9d.
"	30	"	1/6
"	40	"	2/-

and an additional 6d. for every additional 10 plants or portion of 10 plants.

N.B.—BOXES ARE NO LONGER RETURNABLE.

FRUIT TREES AND PLANTS.—Price 1½d. each, except where otherwise stated, delivered free at any railway station.

Star Apple, Otaheite Apple, Jack Fruit, Nilgiri Hills Blackberry plants from beds; Coco Plum, Naseberry, Granadilla, Guava. Cherimoya, Mangosteen, 1/-; Grape, 4½d.

ECONOMIC PLANTS.—Price 1½d. each, except where otherwise stated, delivered free at any railway station.

Ylang-ylang (Cananga odorata), Cinnamon, Annatto, Breadfruit, 9d.; Sarsaparilla, Avocado Pear.

ORNAMENTAL SHADE TREES AND SHRUBS.—Price 1½d. each, except where otherwise stated, delivered free at any railway station.

Bauhinia Galpini; Brownea coccinea, Couroupita guianensis (Cannon Ball Tree), Dillenia indica, Michelia Champaca (Champac Tree) Palms, several species; Poinciana regia (Flamboyant), Posoqueria longiflora, Saraca indica (Asoka Tree), Tecoma spectabilis (Poui). Jacaranda mimosæfolia, Spathodea campanulata, Cassia nodosa, 4½d, each, Triplaris surinamensis, 4½d. Ficus lucida 1/6. Cassia grandis; 4½d.; Thuja 9d. each. Ficus elastica, 1/6 each. Murraya exotica, Cordia sebestea, Diospyros discolor (Ebony), Lignum vitae.

FREE ECONOMIC PLANTS.—Pithecolobium arboreum (Wild Tamarind), from beds; W. I. Cedar, Mahogany, Bastard Cabbage, Bitter Damsel.

NOTE.—Plants are conveyed free by railway. They are guaranteed in perfect order when sent out of the Gardens, but the Department is not liable for any loss or damage in transit. Plants will not be sent to private residences.

Jamaica Agricultural Society.

LIST OF CURRENT PRICES—NOVEMBER, 1937.

All orders must be fully prepaid, *as we do not carry accounts.*

	Bushel	Quart	Packet
GREEN DRESSINGS			
Overlook Beans	12/-	5d.	.
Jerusalem Peas ..	24/-	10d.	.
SEEDS:			
Seed Corn	12/-	5d.	.
Red Peas .	22/-	9d.	
Cow Peas ..	12/-	5d	
Black Eye Peas ..	18/-	9d	
No Eye Peas .	16/-	7d.	..
	100lbs.	1 lb	.
GRASS SEEDS			
Guinea Grass ..	50/	6d.	..
Wynne Grass .	..	1/3	..
	Packet	12 Pkt	s. Oz.
VEGETABLE SEEDS:			
All varieties ..	3d.	2/6	..
TOBACCO SEEDS:			
Virginia (imported)	3d.	2/6	4/-
Havana " ..	3d.	2/6	4/-
Virginia (native)	3d.	2/6	2/6
	Brl. at Office.	Brl. Shipped.	5 lbs
SEED POTATOES..	18/-	20/-	1/-
FEEDS.	100 lbs.	1 lb.	Bag.
Coconut Meal	6/-	1d.	
Dairy Feed ..	8/-	1d.	
Calf Meal	24/-	3½d.	
Mixed Poultry Grain	11/6	1½d	
Laying Mash .	18/-	2½d.	5 lbs-1/
Growing Mash	17/6	2½d	"
Baby Chick Feed .	20/-	3d.	
Chick Grain	17/6	2½d.	"
Meat Meal	20/-	3d.	
Bone Meal	18/-	2½d.	
Butter Milk .	25/-	3½d.	
Fish Meal ..	24/-	3½d.	

STOCK MEDICINES·	Pckt or Bottle	Oz.	Each.
Poultry Tonic (TAVARES)	6d.	..	
Liniment ..	6d.	.	
Healing Oil	6d.	..	
Healing Salve .	1/-	..	
Healing Powder	1/-	..	
J.A.S. Poultry Lice Powder .	.	3d	
Cattle Condition Powder	1/-	..	
Kamala Nicotine Caps ..	2/-		½d
Nema Worm Capsules	.		4d. & 6d.
Chicklivia .	5/-	. .	6d. for 10
Thymol Powder ..	6d.	..	
Karswood poultry Spice ..	1/6 per lb.		

STOCK MEDICINES, *contd*	Pckt. or Bottle.	Oz.	Each.
Poultry Leg bands	7/6 in 1	00 lots	1d.
Spiralets .	4/- per	100	½d.
FERTILIZERS:	100 lbs.	1 lb.	
Calcium Cyanamid	10/-	1½d.	
Sulphate of Ammonia	10/	1½d.	
Sulphate of Potash	12/6	2d	
Ammophos ..	16/-	2½d.	
Nicifos—2 .	12/6	2d	
Muriate of Potash	16/-	2d.	
Nitrate of Soda ..	10/	1½d.	
Superphosphate ..	6/-	1d.	
Adco. .	20/-	3d.	
MIXTURES·			
4.10.12.	10/-	1½d.	
12 8.3. .	10/-	1½d.	
10 10.12. ..	10/-	1½d.	
7.10.12 ..	10/-	1½d.	

N.B. Prices are subject to change without Notice.

INSECTICIDES & FUNGICIDES:	Quart	lb.	Packg.
Paranaph	.	4d.	..
Bluestone ..		6d.	..
*Nicotine Sulphate 40% ..	.	7/6	
*Emulso	1/3	5/- gal.	
Whale oil soap	.	7d.	
Sulphur Lime	..	6d.	.
Rat Poison .		3/6	..
Bordinette .	.	1/3	
Rock Ammonia .	..	2/-	.
Paris Green .	..	1/6	
Arsenate of Lead	.	1/-	.
Para-dichloro benzene .	.	1/6	..
Cyanogas	.	2/9 tin	
Ant Killer .		2/- tin	
Ostico		2/6 tin	
Cut worm Killer		1/6	
Pyrethrum mixture	1/6	..	.
Folio fume ..		6d.	oz.
Soilex for testing soil		..	..

*Customers provide containers.

MACHINERY.	Each.
Estrella Coffee Pulper	£10 0 0
Mtoto Coffee Pulper	£3 17 6
"Solo" Spray (Complete)	£1 5 0
Fly Trap (House)	4 6
Fly Trap (Fruit)	4 0

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THE JOURNAL

OF THE

Jamaica Agricultural Society.

The more people do the more they can do; he who does nothing renders himself incapable of doing anything; while we are executing one work we are preparing ourselves for undertaking another.

Vol. XLI. DECEMBER, 1937. **No. 12.**

BOARD OF MANAGEMENT.

The regular monthly meeting of the Board of Management of the Jamaica Agricultural Society was held at the offices of the Society, 10-12 North Parade, Kingston, on Wednesday, the 3rd November, 1937, at 11.30 a.m. There were present: Hon. Geo. Seymour Seymour, O.B.E., First Vice-President, in the Chair, Mr. U. Theo. McKay, Third Vice-President, Mr. F. E. V. Smith, Acting Director of Agriculture, (*ex officio*), Messrs. Sidney Barton, Rudolph Burke, T. J. Cawley, T. P. V. McDaniel, D. D. Phillips and C. L. A. Stuart; Messrs. P. St. L. Bacquie and A. P. Hanson, Supervisors of Instructors and the Secretary, Arthur Thelwell.

During the course of the meeting Mr. W. Harper Watson attended.

Apologies for Absence.

Apology for absence was submitted on behalf of Mr. Cover.

Confirmation of Minutes of the Previous Meeting.

A copy of the minutes of the previous meeting having been circulated, these were taken as read and confirmed.

Matters Arising out of the Previous Minutes.

(a) *All Island Exhibition.* The Chairman stated that a joint meeting of the All Island Exhibition Committee and delegates from the Show Committee of the Clarendon Branches Associated was duly held. At that meeting the delegates from Clarendon expressed the desire that the Exhibition should be held at May Pen and not at Mona; asserted their claim to first consideration, and asked that their application for a grant or loan of £1,000 for the erection of Permanent Show Buildings be supported by the Board.

Mr. McKay said it was unlikely that the claims put forward by the Clarendon Show Committee would be met by Government, in which case the result would be that the opportunity for holding an Exhibition in 1939 when the Scouts Jambouree would be held, might be altogether lost. He had information that if Clarendon could be assured of Government's help with their project in the future, they would be willing to forego their claims so that an All Island Exhibition may be held elsewhere.

He was also of opinion that matters concerning Shows should not be dealt with by the Half-Yearly General meeting.

The Chairman said that he would place the findings of the joint meeting before the next regular meeting of the Board for their recommendation to Government and final decision would of course be left entirely in His Excellency's hands.

(b) *Wakefield Branch—Finances.* The Secretary stated Solicitors' costs in regard to this matter and also their opinion regarding the funds of the Penny Bank connected with the Branch.

(c) *Appointment of Assistant Secretary*: (1) *Letter from C.S.O.* The following was submitted:—

No. 5371 37. 19th October, 1937.

"I am directed to acknowledge the receipt of your letter No. 62 of the 13th October, 1937, and to inform you that the Government has approved of the appointment of an Assistant Secretary for the Jamaica Agricultural Society as from the 1st December, 1937, with salary in the scale of £250 per annum, rising by annual increments of £20 to £300 per annum, on the distinct understanding that no increase in the Government grant to the Society will be asked for as a result of this appointment, and that savings will be effected, to meet the additional expenditure involved, on the items for Office Staff and Printing.

(Sgd.) J. D. LUCIE-SMITH,
for Colonial Secretary.

The Chairman said the Secretary had some proposals regarding the matter.

Mr. Cawley said the subvention voted by Government was totally inadequate to carry on the work of the Society. Government had in the past opposed the proposals of the Board for the appointment of an Assistant Secretary. Now that there was a change in the administration, Government had approved the appointment of an Assistant Secretary with the proviso that funds for the salary of the officer should be allocated from the already depleted vote for the staff. Government should be advised that although the Board appreciated that the necessity for an Assistant Secretary was now realized, it was quite impossible for the salary of such an officer to be allocated from the present vote as it would entail the starving of other necessary services.

Mr. McKay endorsed what Mr. Cawley said and contended that if it was now possible to allocate this salary from the present vote, it was proof that in the past the funds had not been properly disbursed. He hoped Government would see their way to make the necessary grant for this purpose.

Mr. Burke supported the foregoing views.

The Chairman said the Government had repeatedly asserted that there should be no increase in the allocation for Office Staff. They had stated that they would be willing to increase the subvention to the Society for specific projects which would be beneficial to the agriculture of the Colony. It had to be borne in mind that the present Secretary was seconded to the Society for two years and it was now absolutely necessary to have an Assistant Secretary. He was sorry that expressions on the subject had been made before the proposals of the Secretary had been considered. If it were found possible to make reasonable proposals which would provide for the salary of an Assistant Secretary, he hoped that the Board would agree to such adjustments.

The Secretary then placed certain proposals before the meeting and after discussion the following motion of the Acting Director of Agriculture, seconded by Mr. Cawley, was passed:—

That with regard to the appointment of an Assistant Secretary, the proposals of the Secretary regarding the effecting of savings for the

payment of such an officer, as also the points raised in the letter from the C.S.O. on the subject be investigated by a Special Committee and that a report of the Committee be prepared and circulated to the members of the Board prior to their next regular meeting.

The Chairman then named the following as the Committee: The First and Third Vice-Presidents, the Director of Agriculture, Messrs. Barton, Cawley, Cover and McDaniel; three to form a quorum.

Leave of Absence.

Application from Rev. W. J. Thompson for two months leave as from the 1st November, 1937, was submitted and approved.

Statement of Accounts.

The Statement of Accounts for the month of October was submitted and tabled.

Estimates.

It was decided that a special meeting of the Board should be held on Wednesday, the 17th November, to consider the Estimates for 1938-39

Communications.

(a) *Letter from Mr. A. McArthur re special services of Secretary.* This letter stated that as Panama Disease was slowly making headway in that area, Mr. McArthur intended to lay out a part of his property as a coffee property. He asked that the Secretary be permitted to pay a visit to advise him in the matter.

The Secretary was authorised to arrange to do this

(b) *Letter from C.S.O. re Importation of Goats.* Letter No. 4279/37 of date 26th October, 1937, stating that with regard to the introduction into Jamaica of goats of good milking strain, the matter was receiving the consideration of Government, was submitted and noted.

Small Stock Subsidy.

(a) *Bartons Branch: Application for half-cost of Buck.* The Secretary stated that this Branch had procured an Anglo-Nubian Buck at a cost of £4 and was asking for a grant of £2. This was recommended by Mr. Byles, the Instructor for the district

The subsidy was granted

(b) *Ewarton Branch: Application for half-cost of Buck* A request for Two Guineas, supported by the Instructor, Mr. Byles, from the Ewarton Branch was submitted.

The subsidy was authorised.

Diseases of Plants and Animals: Insect Pests.

(a) *Panama Disease of Bananas—Reports for July and August* The Secretary laid on the table the reports for July and August on the incidence of Panama Disease of Bananas, and stated that copies had been forwarded to individual members of the Board.

Office.

(a) *Secretary's Report on travelling* done by him during October was submitted and noted.

(b) *Sick Leave.* The Secretary stated for the information of the Board that the following leave had been granted on Doctor's certificates: Miss J. Hanson, 10 days as from the 20th October; Mrs. Edwards, further 2 weeks as from 12th October.

Shows.

(a) *Exchange, Printing, etc.* The Secretary stated that in accordance with the requirements, the Branch had lodged the fee of Two Pounds Ten Shillings. The Branch requested that their printing be done through the Society.

The Board agreed to this on the assurance from the Secretary that the Society would not be involved in any expenditure in this connection.

Authorised Persons.

(a) *Letter from Lewis Store Branch re Aid for Authorised Person.* The Lewis Store Branch reported that Authorised Person E. E. Francis had been injured while performing his duties and consequently was unable to work. It was requested that some consideration should be given him.

The Secretary was directed to refer the matter to the Colonial Secretary for the Government's sympathetic consideration.

(b) *Return of Arrests for Quarter ending* 30.9.37. The Secretary laid on the table the quarterly return of arrests made by Authorised Persons for the period 1st June to 30th September, and stated that a summary of this would be published in the Journal.

Resolutions from Branches.

(a) *Sturge Town re services of Instructor.* The resolution requested that steps be taken to enable the Instructor for that area to devote more time to the Sturge Town section.

The Secretary was directed to refer this to the Instructors Committee.

(b) *Rock Hall (Portland) re* (i) *Vaccination Centre.* This resolution conveyed the request that a Vaccination centre be established either at Mount Pleasant or Rock Hall.

The Secretary was directed to forward the same to the Director of Medical Services.

(ii) *Road.* The Branch requested that a driving road leading into Rock Hall be provided.

The Secretary was directed to send this resolution to the Parochial Board of Portland.

New Members.

The following were elected to membership with the Society:—

J. O. Tomlin, Mandeville.
W. E. Foster Davis, 30 Duke St., Kingston.
W. Tyler, Mandeville.
P. A. Williams, 82 Red Hills Road, Halfway Tree.

Other Business.

(a) *Letter from Hanover Branches Associated re change of date of Show from 1st to 4th August,* 1938. The Board agreed to the request of the Hanover Branches Associated that the date of their Show should be changed from the 1st to the 4th of August, 1938, which they found a more suitable date.

(b) *Apprentice to Bee Instructor.* A request that E. O. Murray be apprenticed to the Bee Instructor was referred to the Instructors Committee.

(c) *Experiment in "Dirtless Farming."* A letter from Mr. Ludwig A. Doerflinger, of 75 Hanson Place, New York, U.S.A., was submitted

stating that he desired to have six cement tanks erected in various parts of the Island for his experiment in growing plants in water containing the necessary plant food elements. He also wished the Society to supervise, construct and bear the cost of these tanks, and subsequently that the Instructors should assist in the experiments.

The Secretary was directed to obtain further particulars in this connection.

(d) *Application from F. R. Ricketts, Ginger Ridge, for subsidy for Buck.* This application was in connection with a milch strain buck and was recommended by Mr. Byles, the Instructor.

A grant of One Pound Ten Shillings was approved.

(e) *Application from Tydixon Branch for subsidy for Buck.* This application was for a grant of Two Pounds Twelve Shillings and Sixpence, being half cost of an Anglo-Nubian Buck which was available. The application was recommended by Mr. Bacquie, Supervisor of Instructors.

The amount of £2 12s. 6d. was approved for payment.

(f) *Report on Ginger Ridge Coffee Improvement Competition.* The Secretary presented this report submitted from Mr. Shirley the Instructor.

He was directed to publish the report in the Journal.

(g) *Letter from Jamaica Beekeepers Organization, re Tree Planting Day.* This letter suggested that when and wherever possible during the Tree Planting Campaigns, consideration should be given to the economic worth of trees to be planted, relative to their timber and nectar bearing qualities and values.

This was noted.

(h) *Application from Westmoreland Branches Associated* for secondment of Mr. John Graham for three months from the 1st December, 1937, in connection with the development of the Irish Potato Industry in Westmoreland was referred to the Instructors Committee.

(i) *Letter from Mr. Wray re finances.* Mr. Wray's application for certain arrangements in regard to financial matters was approved.

(j) *Application from Marlie Hill Juvenile Branch for a grant* in connection with their Vegetable Growing Competition was submitted, and the sum of One Guinea was approved.

The Secretary stated that a report of the Competition would appear in the Journal.

Reports from Committees.

(a) *Instructors*: The following reports were submitted for the information of the Board:—

3rd November, 1937.

To the Board of Management:

Your Instructors' Committee beg to report as follows:—

1. *Lectures.*—It was decided that skeleton lectures on selected subjects be prepared by Officers of the Department of Agriculture, and that these be printed and issued to Instructors for use by them.

2. *Fertilizers.*—It was decided that on advice from the Agricultural Chemist as to suitable fertilizers for particular crops a supply of fertilizer be made to Instructors for demonstrational work in their districts.

3. *Appointments—Foremen, etc.*—That Foremen have been appointed as follows:—
John Scudamore for the West Central District.
L. A. McNichol to succeed ex-Foreman Francis (resigned on account of ill-health).
That Roland Gale be employed as the person in charge of the Charlton Demonstration Plot.

That Foreman Rhone has been transferred to the Barton's district for a period of two weeks, and a sum of One Pound allowed for expenses in this connection.

That a Headman has been transferred from St. Thomas (Mr. McLaren's district) to carry on Bombay propagation work in the West Central district for a period as required.

4. *Sub Committee—System. Foremen and Headmen.*

That a Sub-Committee consisting of the Director of Agriculture, Messrs. T. J. Cawley and T. P. V. McDaniel has been appointed to investigate and report on the working of the System of Agricultural Foremen and Headmen in the St. Catherine district, and also to deal with the application from the Long Road Branch in St. Mary for an Agricultural Foreman.

5. *Instructors.*

That an allowance of £3 16/- has been made to Supervisor Bacquie for the period 1st to 16th October. (In office with newly appointed Secretary).

That the Above Rocks Branch is now included in Mr. Henderson's district instead of Mr. Byles'.

That transfer of Instructors has been decided on as follows :—

Mr. Kelly to take over Mr. Thompson's district.

Mr. Thompson to take over Mr. Shirley's district.

Mr. Shirley to take over Mr. Kelly's district.

6. *Nursery.*—That the proposal to have a nursery at Brokenhurst has been abandoned as no land is available in close proximity to the Demonstration Plot.

7. That the land adjoining the Demonstration Plot at New Forest offered to the Society by the Department of Agriculture has been accepted.

8. *Leave.*—Bee Instructor has been granted 10 days sick leave on doctor's certificate.

9. *Affiliation.*—Application for affiliation from Ashton in Westmoreland has been granted.

(Sgd.) ARTHUR THELWELL,
Secretary.

(b) *Vegetables Committee.* As the report from this Committee which sat that morning was not yet prepared, on the suggestion of the Chairman it was agreed that the same should form a part of the Agenda of the Special Meeting scheduled to be held on the 17th November, 1937.

The meeting adjourned to Wednesday, the 1st December, 1937, at 11 30 a.m.

BOARD OF MANAGEMENT.

A Special meeting of the Board of Management of the Jamaica Agricultural Society was held at the Office of the Society, 11 North Parade, Kingston, on Wednesday the 17th November, 1937, at 11 a.m. There were present: Hon. Geo. Seymour Seymour, O.B.E., First Vice-President, Chairman, Mr. U. Theo. McKay, Third Vice-President, Messrs. T. J. Cawley, T. P. V. McDaniel, D. D. Phillips, C. L A. Stuart, and W. Harper Watson; Mr. A. P. Hanson, Supervisor of Instructors and the Secretary, Arthur Thelwell.

Mr. Cawley's motion, which was seconded by Mr. Phillips, that the matter of the proposed salary for an Assistant Secertary be re-opened with a view to having the allocation increased from £250 to £300, was lost.

On the motion of Mr. McKay, seconded by Mr. Stuart, the meeting resolved itself in to a Committee to consider the Estimates.

These were considered in detail.

In view of the fact that Mr. H. W. Lynch, Instructor for St. Elizabeth would reach the compulsory retiring age in March, 1938, it was decided that pending confirmation by the Instructors' Committee this Instructor should be given notice and allowed to continue in the service until the 30th June, 1938.

It was decided that the salary of Foremen should be 40/- per week instead of 30/-.

For the items of expenditure under official accounts the following allocations were agreed on:—

	£	s.	d.
Secretary and Office Staff	2,297	10	0
Supervisors and Field "	8,227	0	0
Instructors Educational Courses at Hope and attendance at Half-Yearly Meetings	125	0	0
Instructors' Tools and Supplies	100	0	0
Secretary's Travelling	100	0	0
Printing and Stationery	90	0	0
Printing and Issuing Journals and Reports	700	0	0
Rent and Rates	66	0	0
Rent of Telephones	27	0	0
Postages and Telegrams	10	0	0
Maintenance Office Equipment	15	0	0
Incidentals	60	0	0
Auditor's Fees	25	0	0
Library Books	10	0	0
Show Equipment Repairs	15	0	0
Bombay Mango Propagation Plots	100	0	0
Citrus Budwood	50	0	0
Small Stock Subsidies	100	0	0
New Office Equipment	30	0	0
Encouragement Juvenile Branches	20	0	0
Fertilizer Demonstrations	100	0	0
Bee Industry Subvention	350	0	0

NEW ITEMS.

Red Peas Manurial Experiments	30	0	0
Seed Corn Breeding Experiments	20	0	0
Seed Potato " "	40	0	0
Cassava Manurial Experiments	60	0	0
Vegetable Marketing (Local)	40	0	0
Educational Films	50	0	0
	£12,857	10	0

SEEDS DEPARTMENT.

Suggestions by the Secretary regarding the re-organization of the entire Department were submitted and approved, and the following allocations for 1938-39 were agreed on:—

	£	s.	d.
Seed Clerk £2 10/- per week (plus commission on profits graduated: to be decided on)	130	0	0
1 Typist at 30/- per week	78	0	0
1 Storeman at £1 per week	52	0	0
1 Counter Clerk at £1 per week	52	0	0
2 Labourers at 15/- per week	78	0	0
1 Cleaner at 8/- per week	20	16	0
Casual Labour	10	0	0
Estimates for 1938-39	420	16	0

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The estimated Revenue for 1938-39 was then submitted as follows:—

	£	s.	d.
Subscriptions	190	0	0
Affiliation and Journal Fees	190	0	0
Advertisements in Journal	300	0	0
Miscellaneous	10	0	0
Bee Industry Sales	5	0	0
Seeds Department Profits	400	0	0
	£1,095	0	0
Appropriation from Seeds Department Surplus	381	0	0
GRANTS FROM GOVERNMENT:			
General Subvention	11,031	10	0
Bee Industry Subvention	350	0	0
	£12,857	10	0

As it needed a reduction of £531 on the Estimated Expenditure to bring the figures in line with an estimated Government Subvention as for the previous year £10,500 (not including the new projects and the provision for increments) the Secretary was directed to devise ways and means of reducing the expenditure and to submit his suggestions to the next meeting of the Board.

On the motion of Mr. Stuart, seconded by Mr. Watson, the Board resumed its sitting, and on the motion of the Chairman, seconded by Mr. McKay, the Board confirmed the decisions arrived at in Committee.

Report of Vegetables Committee.

The following report from the Vegetables Committee was received and tabled:—

15th November, 1937.

To the Board of Management:

VEGETABLES COMMITTEE.

1. Two meetings were held, one on the 23rd September and the other on 3rd November, 1937.
2. The Committee recommends that all sources of demand throughout the Island be ascertained specially with regard to time of supply, approximate quantities used and approximate prices paid.
3. That information be collected in regard to sources of supply with a view to meeting this demand by means of:—
 (a) direct contact
 (b) supply through a small service arranged by the Society.
4. That Instructors be asked to encourage relay planting in order that a steady supply may be assured throughout the season, and a glut prevented at certain times of the year.
5. That special encouragement and help be given to growers of vegetables in the Darliston area, and to this end instructional services be provided especially in growing of Potatoes.
6. That cold storage facilities as offered by one firm in Kingston be investigated from a point of view of economy and practical utility.
7. That a supply service to Hotels and Boarding Houses in the first instance be tried out.
8. That in order to exploit the possibilities with regard to marketing and cold storage, a sum of money be placed on the estimates for 1937-38.

(Sgd.) ARTHUR THELWELL,
Secretary.

The meeting adjourned.

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LEAF SPOT DISEASE OF BANANAS.

Speaking on the subject of Leaf Spot Disease of Bananas introduced by resolution moved by Mr. McKay at a meeting of the Board of Management held on the 1st December, 1937, the Director of Agriculture said the subject was of great importance to the Banana Industry. He did not wish that statement to be interpreted as meaning that he was stating that it was a serious menace to the volume of the banana production of the Island, as it was not possible at that stage to state definitely whether the Industry, taken as a whole, was going to be affected or not. So far as could be seen the present indications were that the disease would be confined to certain areas where conditions were not entirely favourable to the cultivation of bananas.

Reviewing the Banana Industry over the last forty or fifty years, it was apparent that owing to the destruction of bananas by Panama Disease the regions of production had gradually shifted; areas which even within the memory of those present, including himself who had been only four years in the Island, had produced flourishing bananas, were now thrown out of cultivation owing to the ravages of Panama Disease. The Banana Industry had moved into new areas on to soils which a few years ago were not regarded as suitable for banana production. The population had become so conscious of the ease with which bananas could be grown and of the small amount of labour required to furnish satisfactory returns that they had been and were still growing bananas where conditions were not entirely suitable. Under conditions such as those, where soil or climate or both were not entirely suited to a crop, it was more susceptible to disease than when growing in favourable conditions. If Panama Disease had been better understood and more carefully treated in the earlier years of its occurrence, many lands now abandoned would still be growing a considerable quantity of bananas. Planters had just begun to understand Panama Disease and to take precautionary measures to prevent its spread.

With regard to Leaf Spot, it was not correct to say that the argument about soil conditions was out of the question, for in such areas where soil conditions were not suitable, there was evidence of periodical infection. A year ago there was almost a panic in certain infected districts. The Department of Science and Agriculture redoubled its efforts in the study of the disease and gave certain advice. Some planters followed the advice and some did not When the time arrived for the application of preventive treatment, most of the affected plants had almost recovered. During February and March in the St. Andrew Plains the trees had become healthy and people said it was not necessary to do anything. Those who knew from experience in other countries what the disease could do, said it would reappear. It did. It partially cleared up again. It was returning, partially confined to the districts where it had appeared just over a year ago. They must consider the disease as going to be an annual factor of banana growing. Nothing short of a miracle would prevent it. He defied anyone to prove that they had found a cure for it. In districts subject to high production, it was nothing new. He had known it for over eight years, that is, four years before he came to Jamaica. It was not a limit to banana production where conditions were generally favourable for the cultivation of bananas. He made that statement from his eight years experience of the disease, and he hoped later experience would support it. He was sorry to disillusion Mr. Walker who said that from his observations the disease was not in St. Mary. It was there in a light mild form but doing no damage whatever. It was distributed all over the Island.

The disease was transmitted by spores wafted by light wind currents. These were capable of growing and after six weeks producing the conditions as known. Certain favourable conditions were necessary before the spores could grow. These conditions, as compared with conditions existent in some of the other parishes, were not favourable in St. Mary, Portland and St. Thomas with the result that the spots were found only in small quantities on the oldest leaves. Practical planters had assured him that that condition had been noticed by them for the last twenty-five years. One should accept such a statement made without reserve by the man who spoke from the experience of a lifetime. Such a man should be listened to with respect. He, the speaker, had no reason to doubt that this trouble in very mild form existed in Jamaica for a long time. It was possible that conditions had changed considerably and become more favourable for the disease to make its appearance in greater intensity in the Island. Being carried by wind it was impossible to confine it to any area in Jamaica or in the West Indies. Spores of other plant diseases had been detected by aeroplanes 10,000 feet above the sea and it would, therefore, be seen that it was out of the question to confine them to any one locality.

He said dealing more closely with the motion—a very timely one—and referring to the more practical circumstances concerning the matter, he would inform the Board that Government had given consideration to assisting by devising methods of cheapening the materials to be used in an effort to keep the disease under control. It was decided that the Package Tax should be waived. What further assistance could be given remained to be seen, but he could give the assurance that the matter was receiving every consideration.

In regard to the treatment which could be adopted, obviously that would largely depend upon the return which the planter was receiving from his cultivation in relation to the actual cost of preventive treatment. He would like to make it clear that the treatment could only be of a preventive nature. No actual cure for the disease was known, and it was highly improbable that any cure would be found. The time when infection became apparent was not the time when treatment should be applied. When one saw visible effects on the leaves, evidenced by the presence of the oval shaped spots, one could be certain that the disease had gained access to the leaves some six weeks previously, at which time preventive treatment should have been applied.

There was the natural reluctance of planters to apply remedial treatment to healthy plants. In other countries it was now a recognised procedure after long years of patient and bitter experience on the part of the planters who were not readily convinced of its necessity, that spraying, dusting, etc., must be given to fruit trees if reasonable crops were to be assured. It had at least been learned in other agricultural industries that preventive means must be applied at the time when the plant was apparently healthy.

As a result of the work undertaken by the Department of Agriculture during the last fifteen months it was concluded that where conditions justified, and where the occurrence of the disease was serious, spraying or dusting should begin about the middle of March and continue to the end of April or early May at intervals of three weeks. This should be repeated in July and continued into the early part of October at the same intervals—three weeks. It was not to be expected that the treatment was going to prevent entirely the presence of the disease, but it should help to minimise its intensity. Those persons in control of high production areas should continue treatment throughout

the whole year. It would be advantageous to do so if the production of the crop warranted the cost of the treatment. To put it in other words, each planter would have to ask himself if the crop that he would reap was worth the expense of production and only he could make a satisfactory answer.

The treatment which had been tried and was being practised fell into two classes. First, spraying with Bordeaux Mixture, and secondly, dusting with a powder of similar composition of the material which was put into the water to form the spray. It was believed that spraying was more effective, provided the emulsion was properly applied. It ought to be applied effectively to that part of the plant most vulnerable to attack, that is, the newest leaves just unfolding and one or two older ones. The three youngest leaves were the most vulnerable, most tender, most liable to attack and most difficult to protect. The surface of the leaves being waxy it was difficult to get anything to stick to it. To apply the spray one had to employ a machine working at high pressure delivery, the liquid being ejected from a small nozzle attached to a hose. The weight of the nozzle and hose was sufficient to tire a worker operating it after a short time. Add to that weight the pressure of the material being squirted through the nozzle and it would be seen that the worker would be in the same position as a fireman operating his hose. It was difficult work to control it for many minutes. The result was that the labourer applied most of the spray to the part of the plant least needing it. Instead of the spray reaching the young leaves one found it beautifully deposited on old leaves where no treatment was required while the delicate part was left with little or nothing. Though spraying may be regarded as effective, it was found that it was practically difficult of proper application, and it was thought that dusting should be recommended. Material recommended was copper lime dust composed of finely ground copper sulphate and lime. This material does not stick easily to the leaves; it washes off as also does spray. Dusting must be applied in still weather. It was necessary that the air should be still. As with spray, a large quantity of the material used for dusting found itself where it was least needed. Dusting, however, could be more easily carried out than spraying. The mechanical equipment was more easily portable in the dusting operation than was the case with spraying. The actual weight of a duster capable of doing several acres a day was a fractional amount of the weight of a loaded sprayer needed to cover the same area.

Experiments had been in progress for about fifteen months but the investigations regarding dusting were not completed. It was not expected that persons with cultivations situated on hillsides would be able to use an extremely heavy-powered spray particularly when it was fully loaded, whereas a duster being easily portable and easily worked could be more readily employed. It looked as if dusting would have to be resorted to. Spraying was admitted to be better than dusting, but on the whole it was felt that dusting was the only practical method, even though it may be somewhat less efficient than spraying. The treatment to be applied to the leaf was intended to leave a deposit which would prevent the spores from developing. In order to effect that, it was necessary to have a uniform cover on the leaves. It was essential to see that the most delicate and most vulnerable part, the new leaves, got the greatest amount of deposit of the material. Although it was admitted that it was difficult both with spraying and dusting to get the material to stick to the leaves, the attempt should be made. For each application it would require about forty pounds of powder per acre to carry out dusting. The cost would vary somewhat according to the conditions existing, but accurate figures would shortly be given out. It would be very easy for anyone to work out costs when it was understood that the material costs somewhere in the neighbour-

hood of 16/- to 18/- per hundred pounds, and with the added cost of a duster and labour it should be in the vicinity of something like 8/- per acre for each application of dust. As mentioned before, the applications should be made at intervals of not more than three weeks, remembering that the two or three youngest leaves were the most vulnerable. The ordinary banana tree developed a new leaf about every twelve days. It was not considered practicable because of the high cost to recommend treatment every fourteen days. The three weeks interval was decided on as meeting the situation, as it were, half-way. Regarding the cheapening of the material which he had already referred to, one solution he continued would be the importation of the material in bulk,—his suggestion being fifty tons at a time. The Jamaica Agricultural Society had been invited to act as distributing agent. In the meantime the work undertaken by the Department was being pursued and the co-operation of planters being continued. The planning of a definite campaign was being worked out but it would require a little more time, say another two or three weeks before a definite pronouncement could be made. They had not reached the stage where wholesale spraying or dusting could be recommended for the country. In the lower parts of Vere and in certain districts in St. Elizabeth, remedial measures would have to be adopted if growers desired to save their crops. In Manchester the situation was not so bad. In certain parts of the country it was doubtful whether planters would be able to afford the cost of treatment, but as mentioned before, each individual would have to work out the cost and make his decision.

The obvious thing under the existing circumstances was to place the Agricultural Instructors and the Plant Disease Inspectors in a position to give demonstrations as to how the machines should be operated. It might even be necessary to go further and enter into some arrangement where small hand machines could be lent out, but he preferred not to deal with that matter in detail at that time.

He would assure the Board of Management that the matter was under very close consideration.

With regard to the question of short-fingered fruit, he believed that every banana planter, and for that matter everyone who had anything to do with the industry, realized that short-fingered fruit was not new. He was quite satisfied from all the evidence that was available that the Leaf Spot disease was not the particular factor responsible for short-fingered fruit. Bananas were being grown all over the country and conditions had been introduced which militated against the proper growing of fruit. The underlying causes should be investigated. It might be that Leaf Spot was a contributory factor. It was not possible however, to deal exhaustively with that subject but he simply wished to mention it.

A good deal more knowledge was required before they could make a forecast respecting the Leaf Spot disease. So far as could be seen there was no serious risk to the districts of the Island where only the lightest infection existed. It may be a matter for consolation that in the districts where *Cercospora* first appeared there was the highest degree of infection. Even with regard to those areas, it was not possible to make a final statement. All they could do would be to study the disease from every possible angle and test out preventive and control methods and advise planters as to what they should do and the measures they should adopt, and assist them in every legitimate way to deal with the problem according to the necessities of each district.

He desired to touch on one other point, and that was the subject of banana trash. There was the suggestion in the resolution that the banana trash may be one of the means of disseminating the disease. Undoubtedly it was. The spores were produced in such countless millions, however, and so easily wafted that the movement of trash

from place to place could not be regarded as a very serious means of distributing the disease. It was most undesirable to employ burning as the means of disposing of infected banana leaves, as the current of warm air from the burning leaves carried the spores up in the air before the heat could destroy them and it was, therefore, evident that it was much better to bury the trash than to burn it. The spores become incapable of development after a few days burial. The disposal of trash at Railway Stations and other centres had been given consideration, but they could devise no more effective method for the present than to continue with the method of burning. Whether it would be possible to develop his idea that banana trash may be utilized as useful material for the preparation of manure was not yet known.

It was doubtful if the cutting off of the affected leaves would be useful in controlling the disease, but at any rate it made the field cleaner and that was desirable.

He thanked the mover of the resolution and those who supported it for bringing the matter forward.

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PIGS FOR PORK.

By ARTHUR THELWELL.

(*Lecture delivered at Agricultural Course at Hope.*)

There is no record that I know of showing the consumption of pork in Jamaica, both as "fresh" pork and "corned" pork but if we are to judge from the insistent demand for fat barrows and the comparatively high price for pork, it must be fair to assume that this consumption is very high.

The class of pork exposed for sale in the markets of the Island is, however, speaking generally, of inferior quality.

Now, if the quality of a product is not good, the demand for that product will decrease and the public will consume some other product in which the quality is high. Thus, in Germany, where the quality of beef is poor, people consume less beef and more pork.

On the other hand the raising of the quality of a product by better methods of production and marketing, e.g., fruit and milk—greatly increases the demand for those products.

It seems then:

(i) either that pork finds special favour with us or the beef is indiscribably poor;

(ii) that the local market for pork can be greatly expanded;

(iii) that it is hard to understand why commercial pig-rearing has failed to attract farmers; and this moreso when it is realised that:

Pigs produce one pound gain in less time on less feed than any other farm animal;

That they consume so much which might otherwise go to waste; that we can market many products through pigs; that they may be made to harvest their own crops, manure the land and help to plough it.

Rearing an individual pig for pork is a popular fashionable hobby in Jamaica: popular having regard to the number of individuals who indulge in it; personal as it is carried on round the backyard, a hobby because it does not only fail to make money but is actually an expense to those who are brave enough to indulge in it; and fashionable because the model of pigs which persons undertake to rear bears no relation to what they propose rearing them for, but rather to their individual taste, likes and dislike. These individual likes and dislikes are notable for their dissimilarity and express themselves in various ways: notably in the colour of pigs, but moreso in the size of them, and with the belief that the bigger they are the better the returns.

Quality never enters the bargain; a pig is a pig after all, and provided the animal is well layered with lard everybody is satisfied—that is, not counting the purchaser as somebody at all.

This lecture will deal with Pig Pork; we are not to-day concerned with Bacon as such, (although there must be money in it, having regard to the amount which I hear various persons have sunk in it from time to time), but in order to get at the type of pig which is accepted as suitable for Pork we must compare the two—Pork Pig and Bacon Pig.

I invite your attention to Sketch 1 on the paper before you, where we may examine the relative values of the different parts of the carcase.

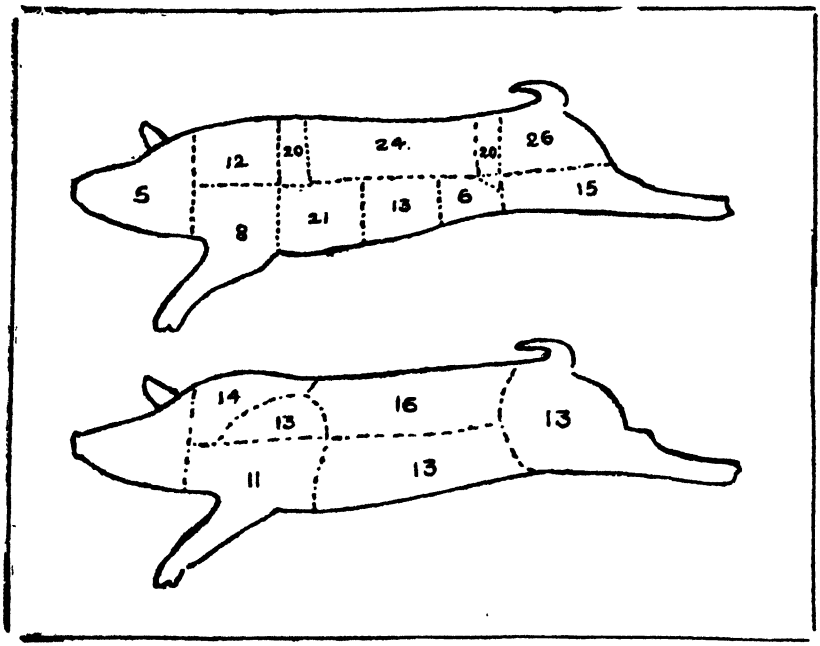
Note.—Sketches used to illustrate Lecture are taken from studies by Research workers. Figs. 1, 2, 3 by Dr. John Hammond; Fig. 4 by Henseler.

The upper sketch shows what these are in the bacon type, and the lower what they are in the pork type.

Some general features are common to both.

The first is that the back or top line is more valuable than the belly or under line. This is because the meat or muscles which lie along the back exist in a thick "blocky" mass, whereas the muscles which exist in the under part of the body are divided up and interspersed by layers of fat. It is muscles in thick block that makes good pork.

FIG. 1.



Above—PORK. Below—BACON.

Relative value in pence per lb. of different parts of carcase in Pork and Bacon pigs.

The second feature, also common to both, is that the value of the meat along the back increases as we pass from the head to the tail. This again is, for the same reason, i.e., that the muscle exists in more compact blocks in the loin than it does in the shoulders where it is interspersed with layers of fat.

The first feature—large proportion of back to belly—is a matter of selection, viz., animals with well sprung ribs rather than with deep shelly sided animals. It depends also on the age (or rather the weight) at which the animal is butchered, for as the animal grows it changes its shape and body proportions. In the early stages of growth the body lengthens, then afterwards in the later stages it deepens in proportion.

This change we will discuss at a later stage, but it must be borne in mind that breeds and types differ at the rate at which these changes proceed, and to get the best result from any breed the pig should be butchered when the maximum length-growth proportion has been

reached and before too much depth of body has been added. This in Pork types such as Berkshires is about when the animal is between 100 and 126 lbs. live weight, and in the Bacon type such as the Tamworth and Large White 200 lbs.

The second feature—high proportion of loin to shoulder, neck and head, is also largely a matter of selecting animals in which the back is strong and the loin well developed. This selection should always be made in relation to weight, for as the animal grows up there is a regular change in the proportions of the body. Further in the last stage when the animal is bursting fat these defects might be successfully concealed.

It is not only by selection that we may get this desirable feature, but by proper feeding, for as we shall see later, the most promising type of the most suitable breed may lose this valuable feature through poor or bad feeding

Let us compare the first feature with popular practice and see how it should help us in selection of pigs for pork.

"The back or top line is more valuable than the bottom or belly line."

None of your pigs then with long sagging, razor backs, but a firm strong back, preferably arched and powerful over the loins, with well sprung ribs with the appearance of a bow. As you will see from the illustration, the first (mostly muscle) growth follows the ribs and if they are long loose and shelly your lean meat will be long and thin.

We observe also that the proportion of back to belly meat depends on the time of slaughter The longer the time the animal is kept the larger proportion of belly (inferior—low-priced) meat.

Now this belly meat develops last, that is, in the later stages of the animal's life. So then when your barrow pigs are kept month in month out in a close sty, plied with your best feed in the later stages of its life, you are producing thin meat of low value, because of low weight, even if we had no regard to quality and the consumer. In addition, as a matter of fact you lay on a thick mass of fat, which, having regard to the low price of vegetable oils and fat is uneconomic. Moreover, you are helping the animal to delude you into the belief that it is a better type than it really is.

Since then breeds and types differ at the rate in which these changes proceed, you simply cannot make good pork at a profit out of a type of pig which is unsuited in this special characteristic.

Those of you then who favour the big breeds for Pork and pride yourselves that you are making money and good pork, had better begin at once to revise your ideas.

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All these breeds are late maturing: they lay on flesh in a way peculiarly suited for bacon and not for pork, and when you range them for a year or so then sty them for another nine months you are simply wasting time and energy. Your method stands condemned by the anatomy of the pig.

Now let us study Sketch 2. For purposes of comparison they have all been reduced to the same size. No. 1 is a two-month old foetus. You will observe that it is nearly all head. Number two represents a pig about a month old; number three at the weight of about 100 to 125 lbs. live weight—4 to 5 months.

In order to appreciate the sketches we must consider the manner in which a well-fed pig grows In its early life it is nearly all head. As it develops a wave of growth flows, as it were, from the head towards the tail, first the shoulders then the back along the loin and so on.

From Sketch 2 you will observe that Fig. 1, which is a foetus of about two months old, is nearly all head and neck with poorly developed loins. At a week old (the second figure) its head and shoulders are still proportionately large, but by the time it has got to pork weight, 100 lbs. in a good type pig well fed, the loin has developed to large proportions in relation to the head and neck

While this improvement takes place in pigs of good type which have been selected and well fed, it must be realized that this conformation cannot be kept up without continual selection of a type for this quality. For this is not the natural tendency of the anatomy of pigs, rather is it to develop heavy neck and shoulders. Or in other words to develop most where the pork is likely to be poorest and of lowest value, as observe the sketch of the Wild Boar at the bottom. He has grown up with but little change in his anatomy. Heavy head, neck and shoulders, are natural tendencies in pigs, and unless rigid selection is maintained the tendency for this reversion will always occur. Size and blockiness of the lean meat are essential to good pork, and since the development of this feature in the loins can be easily hidden by excess fat, it is necessary to determine how much of this apparent loin development is muscle and how much is fat. The butchered carcase is the acid test.

So then, it is from selecting and breeding from sows and boars which show up well in such tests that improvements are made

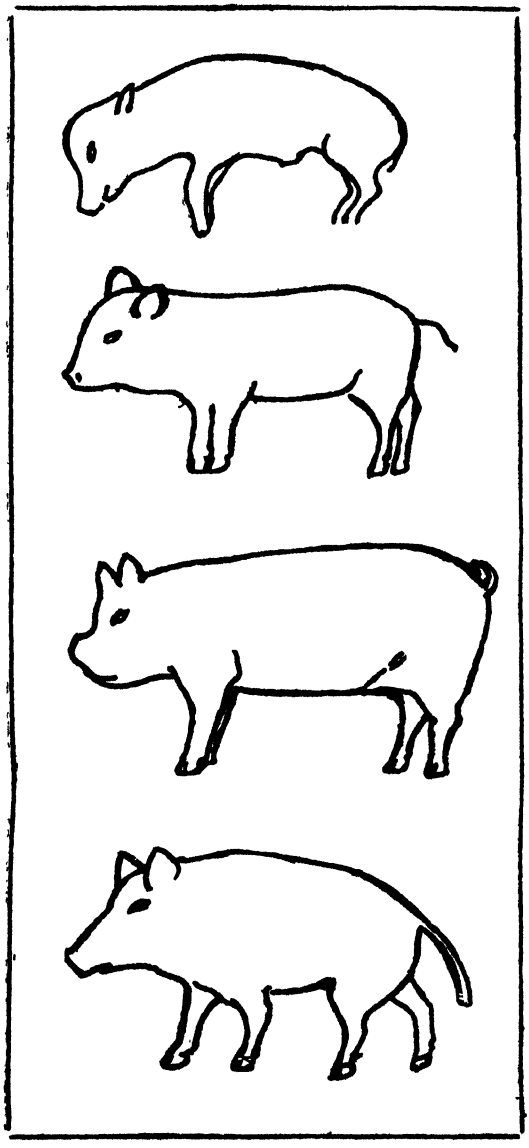
If the pig is poorly fed, say at such a crucial time as weaning time, this first wave growth ceases and you are left with an animal of poor conformation—weak in the back, poor in the loins and its head out of all proportion, on the old principle that "Dawg magre hiss head swell."

After the completion of this first wave growth, the second downward wave growth begins, the period which is regarded as the unprofitable period, for you are then using your feed for the production of inferior or belly meat of low value (weight and quality). It should then be easily realised why pigs for pork should be butchered at the stage when the first profitable growth has ended, which in the true type of pork pig well selected is when it will butcher about 100, if well fed.

In similar fashion the various tissues of the body change as the animal grows.

These changes may be observed also in Sketch 2, for example. In the ham of the pig shown as one week old the proportion of the bone is large and there is but a thin layer of flesh, whereas at 100 lbs. the muscle has filled out and the proportion of bones has become smaller. These changes still proceed further up to about 100 lbs. in the pork type and 200 lbs. in the bacon type. After this stage has been reached

FIG. 2.



(All reduced to the same size.)

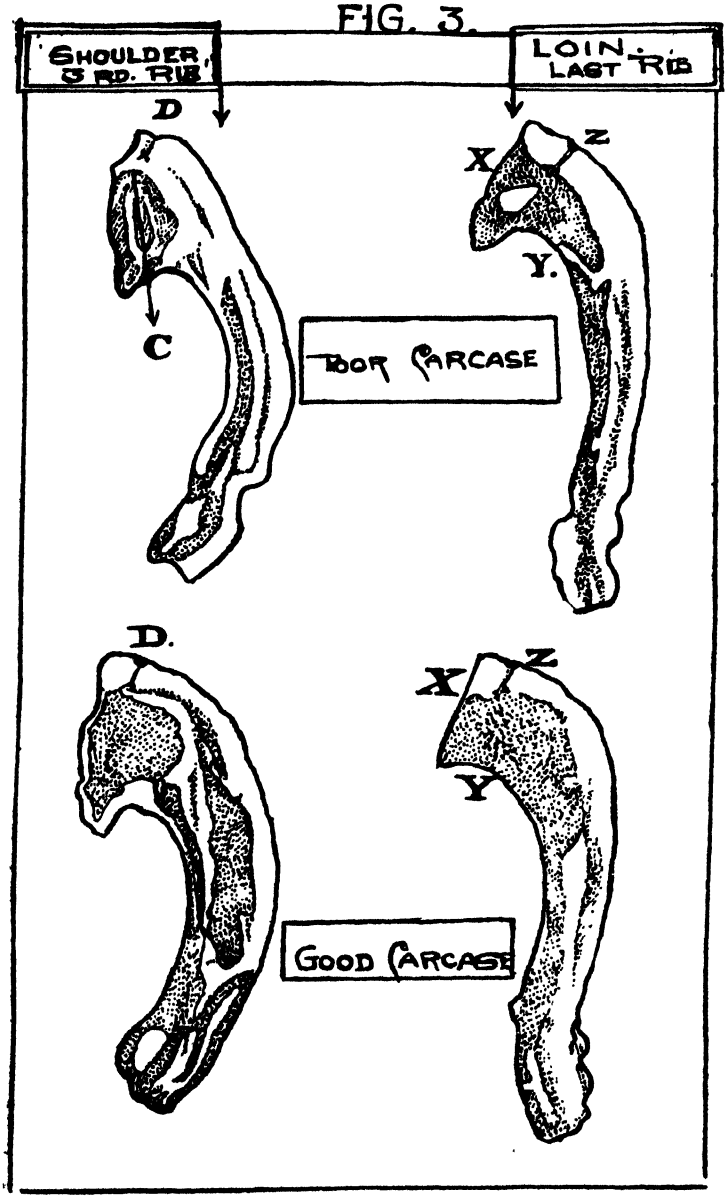
Change in the body proportions of the Pig as distinct from size. Note increased proportion of loin to neck as pig grows up, i.e., if the type is desirable. In un-improved type, such as Wild Boar, animal has heavy head and shoulders and poor loins.

the proportion of fat increases, that is, the animal begins to lay on fat such as is shown at D in the cuts of meat—Sketch 3.

As this fat is light, and comparatively useless, you will readily realise that from this stage onwards the animal becomes unprofitable.

In early-maturing breeds such as Berkshires, this change is rapid, while in late maturing types such as Tamworths the change in proportions is slower although the actual gain in live weight may be greater.

FIG. 3.



Cuts showing development of meat in poor and good carcase.

Herein then lies the main difference between the bacon type and the pork type.

At 100 lbs. live weight an early maturing type has grown a good thick body with muscle in proportion to bone; on the other hand at the same age the late-maturing breeds—the large hogs—have not yet reached the stage of body thickening, and full muscular development although they have made a lot of bone growth.

I hope I am convincing you of the fallacy of the present practice of keeping and feeding hogs in stys over a long period of time when the money for feed could be profitably spent on feeding another pig during this desirable first wave growth period.

Fig. 3 shows various cuts of pork, and from them you can see what they look like when taken through the shoulder at the third rib and through the loin at the last rib.

It is much easier to get a thick depth of muscle at the shoulder as that part of the body develops first, but although the actual depth of the muscle is greater than that from the cut at the loin, it is of less value because it is interspersed with fat instead of being in one thick block By observing the "eye" of the loin cut, it will be seen that the length develops first and the depth or thickness afterwards. This length of lean meat depends on the length of bone, as the growth follows that, and the depth—which is very important in giving a good "eye" develops later, and therefore suffers most from unfavourable conditions of feed. But it is this "eye" which makes the cut a proper cut both from the point of view of good pork and good price, which, in so far as you are concerned means weight when the animal is butchered, so then not only is selection for good spring of ribs and early maturity vital, but so is Feed.

The snag here is how to develop this "eye" without getting too much fat on the carcase, and this constitutes one of the problems in producing good profitable pork. One way certainly is to breed from animals whose carcase shows this feature; another is feeding right—feeds rich in proteins such as separated milk or vegetable proteins plus salt and other minerals, for however much the breed character may be present it cannot express itself unless the right nutriment be given.

By the time about 200 lbs. live weight is reached, however, the early maturing Berkshire has developed too much fat in proportion to lean meat and too much belly meat to make a suitable and profitable carcase. And this—in addition to such factors as brightness, firmness and whiteness of meat constitutes quality—i.e., proportion of the various tissues—bone, muscle and fat.

Since length of bone develops early and thickness of muscle later, it is only by rearing early-maturing blocky type that quality can be obtained in pork.

At 100 lbs. live weight the early maturing pork type gives a much thicker cut of meat in the loin and correspondingly greater thickness of meat on the leg in proportion to the length of bone than does the bacon type: it is mainly for this reason that the pork type has been evolved.

The weight of 100--125 lbs. live weight is a fairly arbitrary figure to give as an indication as to the time when the Pork Pig should be butchered.

Speaking scientifically, we watch the Feed curve.

Four pounds of well balanced ration will give you one pound of live-weight increase so as you begin to require greater and greater weight of feed to produce your pound live weight, so your pig becomes less and

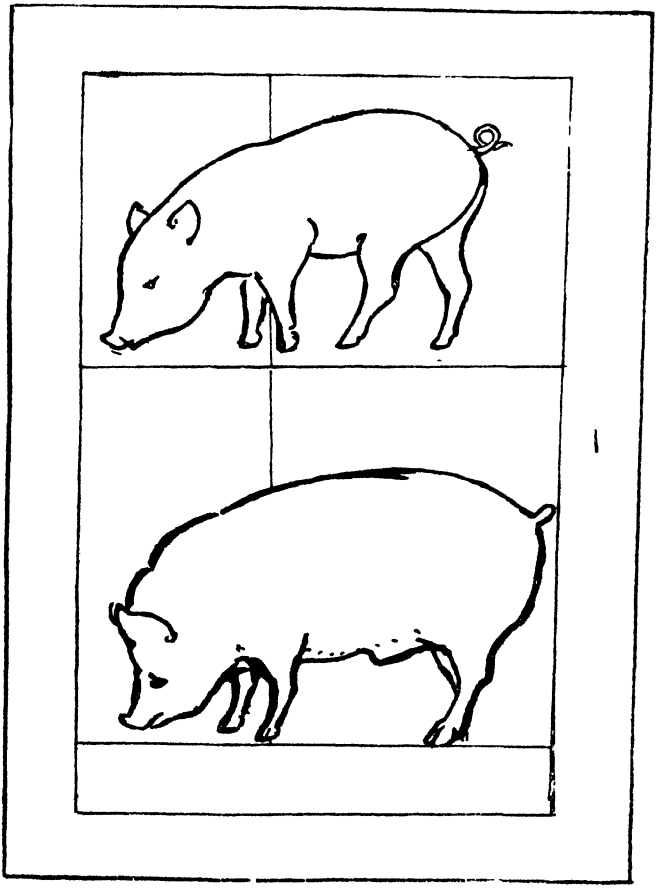
less profitable and this indicates the stage at which your pig should go to the butcher.

It seems then that it is a question of feeding some three pigs in succession where one is now kept.

Growth of Large-Type (Bacon) Pigs.

In the heavier type hogs the body changes are exactly similar save that they are slower. These big pigs do not finish the first growth until they are some 200 lbs. live weight. They are therefore harder to feed, not only from a point of view of time, but their growth wave are more difficult to control, and it is harder to finish them with economical proportions of bone, muscle and fat. Further, the meat is heavy and uninteresting and lowers the quality of product. It is sound sense to leave them alone if you are producing pigs for pork.

FIG. 4.



Two Pigs from the same litter.

Classification of some Breeds.

The various breeds of pigs may therefore be placed in series according to the rate at which they change their proportions and therefore according to the weight at which they are fit to butcher. A tentative order would be:

Early Maturing: (kill at small weights); Berkshire; Poland China—Pork.

Essex, Large Black Durocs—Dual purpose.

Late Maturing: (kill at heavy weights); Tamworth; Large White—Bacon.

Obviously, different strains within a breed vary and the desirable characteristics can only be maintained by rigid selection.

To see how a change can be brought about within a breed we have only to look at what happened to Poland China breed in the United States during the course of a few years.

Up to 1912 when the demand for lard was good, an early-maturing type which developed a large proportion of fat was bred, but as the demand for lard decreased owing to competition with vegetable fats, breeders selected for a later maturing type: this change was associated with a later-maturing type and a larger animal. Thus the 1913 Model was superseded successively by the 1915, 1917 and 1923 models. Such changes in adult form are caused simply by slowing down those changes in form and proportions which take place with age.

As mentioned before, the body changes can also be shifted by feeding on a low plane of nutrition, when the formation of fat is inhibited more than muscle, and that of muscle more than bone, and this is exemplified by the sketch which has been copied from an experiment by Henseler, who by extremes of high and low feeding far beyond that which would occur on a farm, produced from the same litter at the same age the two pigs illustrated in the sketch No. 4.

Feeding.

And that brings me to the important matter of Feeding.

We are all only too well aware of the difficulties, due to high cost, of providing feed rich in animal and vegetable protein and carbo-hydrates for pigs locally.

But the question is whether we are making full and proper use of the feeds which are available so as to get the best nutritional results from them.

The general question of nutrition of animals would be a complete series of lecture by itself.

Fortunately within recent years much knowledge has been accumulated with regard to what is regarded as the primary nutrients, i.e., Protein, Carbo-hydrates, and Vitamins, and how much is required for nutrition of animals, but as regards minerals much less is known.

This we know, however, that they are just as vital as the primary nutrients even though they are not of importance in supplying energy.

Professor Crampton of MacDonald lays it down that dogs fed mineral-free food died at the end of 22 days. Such feed as they did eat could not be digested.

There is evidence from research that some reproductive troubles are due entirely to mineral deficiency; and we know also that deficiency of certain minerals, notably calcium, or lime is a limiting factor in milk production. The fact is that unthriftiness may be generally traced

or be directly connected in one way or another with lack of minerals. We know that some twelve minerals are found in the animal's body, but fortunately the feeder need concern himself with but three.

These are:—

Common Salt,
Calcium (lime),
Phosphorus.

For some classes of stock iodine may also be needed. Where goitre is present iodine is essential, and is laid down as a safe mineral to feed during the latter part of pregnancy period. It also helps in case of hairless pigs, and should be fed to pregnant sows by dissolving 1 oz. of potassium iodide in a gallon of water and adding a tablespoonful to the daily feed.

Growing pigs require ¼ lb. common salt per day and about one-third ounce lime and one-third ounce phosphorus, while mature hogs require one ounce of each.

Mineral supplement may be incorporated in the feed, but a better way is to feed it in a mineral box placed in the run.

A mixture of:—

50 lbs. bone meal,
25 lbs. air slaked lime,
10 lbs. wood ashes,
5 lbs. common salt

thoroughly compounded and kept in a mineral box before the pigs at all times will make a vast difference in their thriftiness. (Charcoal used to be incorporated in this mineral mixture, but it has been found to be of no value.)

As regards vitamins, much misinformation still exists, but we are certain that ample proof exists that they are vital for life and normal growth, not so much among cattle, horses and sheep where none of the so-called vitamin-deficiency disease is reported, but especially in the cases of pigs and poultry.

In the case of pigs, however, it is known that they do not suffer from scurvy, due, as the Senior Veterinary Officer will tell you, to the fact that the anti-scorbutic vitamin can be and is made in the pig's body.

Now the best sources of vitamins are:—

Cod liver oil.
Dairy products,
Fruit juices

and the green growing parts of plants, especially legumes, and we know that direct sunlight acts in the same way as the anti-richitic Vitamin D.

So then, some sort of milk is essential in the dietary of pigs; separated milk, whey, butter milk, skim-milk; so is an abundance of green feed—hog slip, water grass, cow peas and all the others well known to you.

And plenty of exposure, especially of young pigs, to sunlight. Thus, look to the situation of your runs.

Now as regards other feeds. The first thing to bear in mind is that, unlike cows, for instance, the digestive system of pigs calls for little fibre.

They require Carbo-hydrates, animal and mineral protein judiciously balanced if they are to grow economically.

It might be well to discuss some of our common feeds.

CORN: This is the greatest fattening feed for hogs, provided it is balanced with protein; if it is not, half the value is lost. It is high in carbo-hydrates but low in protein. For corn to be economically fed it

should be balanced with coconut meal plus a little tankage of blood meal. (What a pity all that blood flowing from our slaughter houses is not processed into blood meal. It is such a valuable feed, so scarce and high-priced and so suited for feeding all classes of animals.)

Corn then, although high-priced comparatively, is most suitable for fattening, but is almost useless unless balanced. But for Brood sows, chiefly because of this fattening quality, it is poor feed and should not be so used. Separated milk and chaffed alfalfa also make good balance for corn,—equal parts plus 10% tankage. Corn fed to pigs need not be ground.

Coconut Meal.

Excellent feed though this be, it will give you unsatisfactory results unless it is balanced because it is high in protein and low in Carbohydrates. So then, coconut meal should be balanced with corn or cocohead or breadfruit or some feed high in carbo-hydrates.

Oats is too expensive a feed to consider, but if it has to be fed it is best ground. It is far too bulky for fattening pigs and might make a useful addition to the ration of the brood sow. It is rated at 25 per cent. less than corn.

Cocohead, Banana green and ripe, Sweet potatoes, other roots (toya, etc.) and breadfruit are excellent for supplying the much needed carbo-hydrates, which because of their high cost and unstable supply is one of the main difficulties of pig-rearing locally. There is no necessity to boil these feeds. They are easily digested and palatable enough, but they are nearly useless fed alone. They must be balanced with feeds high in protein if they are to give results—Coconut meal and a spot of blood-meal or tankage.

We want badly some local supply of a feed high in carbo-hydrate and cheap. Molasses might fill the bill save that it has the drawback of being so laxative.

Chopped cane would do well to help this supply, for although high in fibre the pigs do not swallow the fibre. Mangoes and plums are high in sugar (carbo-hydrates) fats and oils and make good fattening feeds.

Linseed meal, excellent feed though it is, may be easily replaced by tankage which is cheaper.

Cotton Seed meal is poisonous to pigs and should not be used.

Bran is far too bulky, although it may be used in the sow ration before she farrows, for its laxative effects.

Rejected Egg Plants chopped up and balanced make good fattening feed and rejected sweet peppers are also useful.

All type of roots are good. Mention has been made of Cocohead and sweet potatoes. The latter should be hogged off from where it is planted when it will be found that pigs will eat vine, roots and all, and provided this be balanced with some protein, coconut meal, separated milk and a little blood meal, is excellent for fattening.

Peanuts should also be "hogged" from where it is planted, but on the other hand should be balanced with carbo-hydrates, and it would be good policy to keep the pigs hogging sweet potatoes and peanuts alternately.

Alfalfa as a feed for all stock bears a high reputation. It is rich in protein and is used in place of oil meal to balance rations. As hay for horses it is highly rated; it is excellent for cattle cut and fed fresh (cattle bloat when grazed on Alfalfa). As a feed for pig, either for grazing or chopped up in the ration, it is not only excellent for itself, but for the fact that it replaces high-priced meal.

Some eight pen-keepers have grown small patches of Alfalfa successfully, and there is no reason why every pig farmer should not grow a patch.

And we must not forget Pasturing. All brood sows should be run on grass but especially should the pregnant sow before farrowing. She wants grass; she wants exercise, she wants to be on a clean run so that her litter will run less risk of being infested with worms and other parasites to which they are heirs and which set them back so badly.

Nothing has been said about Dairy Products so far, but there is no feed so valuable. Here is one way of marketing some of the surplus milk which is said to be going to waste all over the Island.

Use 4 lbs. meal to every gallon of separated milk for young pigs up to 10 weeks old; use 5 lbs. meal to every gallon for pigs from 10 to 16 weeks, and 8 lbs. meal to every gallon for pigs from 16 weeks up

As the pig becomes older so the protein feed should be reduced A rough programme would be a quarter of the ration for newly weaned pigs to be protein feed, coconut meal, for instance; pigs from say 50 lbs. live weight to 100, between one-sixth and one-seventh of the feed to be protein, and after that say for mature breeding stock one-tenth, save that for nursing sows the percentage should go up to about 16.

As for the amount to feed you will want about ¼ lb. of feed for each week the pig is old; or 4 lbs. of feed for every 100 live weight of the pig, or as much as the pig will clean up in 15 minutes.

And we must not forget water; a good supply of clean water should be before the animals all the time. The mechanical difficulties in keeping up the water supply is great, but a good stunt is the use of a sound pork barrel turned into a trough with a bung below the water level and another above.

As for the actual feeding programme, it is well to bear in mind that if you feed the pregnant sow well you are feeding the pig before they are born. After she has farrowed she needs no feed save water, for at least 24 hours due to her feverish condition. After this she will want a liberal supply of milk in some form, and "feed" high in protein if she is to make a good job of the pigs. It might be best to use a pair of pliers to snap off the 8 milk teeth with which the pigs are born or the sow might object to their feeding as often and as long as they should

By weaning time (8 to 10 weeks) the pig should be well used to feeding for themselves, for by this a creep should have been constructed for them. It is at this time that the feeding becomes so important

This is the time that the first growth wave, beginning from the head, is likely to lessen and stop unless the pig is well fed. If they are not well fed they droop in the back and grow out with weak loins and fail to make profitable pork pigs.

By this time the young boars will have been castrated (6 to 7 weeks) and they should be separated from the young gilts, as since they are being fed for pork they must be given a different ration—one higher in carbo-hydrates. If the gilts be fed this fattening ration they will grow up too fat and will not breed.

Then all you have to do now (it sounds so simple on paper) is to keep the animals free from parasites—internal and external.

Rubbing posts planted firmly in the ground, wrapped with bags and saturated with old oil from a motor crank case will keep off lice and mange, and a wallow hole, just an ordinary hole in the ground (no concrete) filled with water and with occasional additions of a little jeyes will contribute to the animals' well being.

Barrenness.

With regard to barrenness—your gilts should not be grown up fat or they will fail to breed. At 8 months old, when they should be put to "service," they should be well grown but not fat, and provided your boar is vigorous she will not fail to breed.

Gilts should be put to service on the second day of the heat period as a service at this time results in large litters. (The reasons would take too long to explain just now). And you should use young vigorous boars.

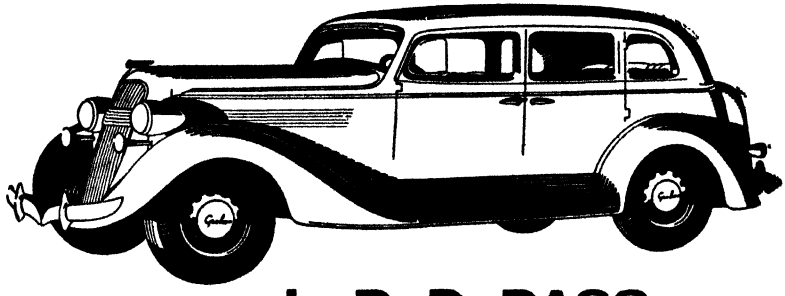
It is alarming what preference is shown for a doughty, cumbersome old boar, whose throat should have been cut a year ago. Ten chances to one he hasn't a live spermatozoa in his hairy old carcase, and after his best manages to throw a litter of two or three pigs.

Use young, vigorous boars and you will have large litters.

Graham

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(*Continued.*)

CHAPTER II.

Breeding.

The art of breeding is perhaps the most important phase of livestock production, as it is by this means that the livestock raiser depends for the improvement of his animals. A livestock raiser without a knowledge of breeding is definitely handicapped, as he is unable to determine what progress, if any, he is making in his breeding operations. To be successful a breeder must have not only a knowledge of the principles of breeding, but he must know the various points of the breeds with which he is working, and be able to recognize their strong, as well as their weak characteristics. With such a knowledge he will be able to mate his animals judiciously, and obtain the best results. Without such knowledge he will be unable to recognize any of the inferior characters, and will be unable to make the proper selection of his animals; a most important consideration in the breeding of livestock.

Necessity of a definite breeding policy.—It is very important that the breeder of livestock have a definite breeding policy, and breed his animals with definite ideas in mind. By so doing he will be able to fix his lines of breeding, and tell just what progress he is making in the improvement of his herd or flock. To do this successfully, he must know the makeup of the breed or breeds with which he is working, and try at all times to have each generation he produces, an improvement on the preceding generation. Unless this is done, he is making no progress in his breeding operations

The breeder should carry out his operations with a definite idea in mind In the case of dairy cattle he might have as his goal a definite minimum production for his herd, and must keep this idea always in mind in all his breeding plans for the herd. A breeder of livestock without a definite breeding policy, is like a mariner without a compass, he is unable to tell in what direction he is going and what progress he is making.

To have a definite breeding policy alone, is not enough, it must be a sound policy, in keeping with the class of livestock for which it is intended, and must, above all, be systematically carried out.

How breeds are formed.—While there are a great number of different breeds of livestock in the world to-day, it is only within comparatively recent times that attention has been paid to the systematic improvement of animals along scientific lines. While a breed such as the Arab horse, has been bred pure for centuries, the most common breeds of livestock with which we are familiar to-day did not exist as such two generations ago.

In the early days, before man became interested in the improvement of livestock, any improvement made was mainly by Nature, where only the fittest animals survived, the weaker ones succumbing to the adverse conditions arising from time to time.

In later generations, after man had learned that he could domesticate animals for his benefit, more attention was paid to their breeding and care. Later, when the livestock industry commenced to develop,

certain standards were set up for the various breeds; and animals, in order to be classified in a definite breed, had to comply with such standards. This tended to produce animals which were uniform in appearance and inherent qualities, in other words animals which when mated together would breed true.

In many cases various breeds were crossed in an attempt to combine the good qualities of each, and it is to this means that most of our present day breeds owe their origin. While this method has many arguments in its favour, there are disadvantages to such a system as we shall see later.

The majority of types to-day are raised with a definite idea in mind, and more attention is concentrated on having a breed do one thing well, than several things in a mediocre way. Examples of this are the great production capacity of the dairy breeds, the early maturing qualities of the beef animals, the great speed of the race horse and the tremendous pulling power of the draft horse. In late years a great deal of work has been done in connection with the improvement of all classes of livestock, with the result that to-day livestock raising and breeding is a more specialized business than it ever has been.

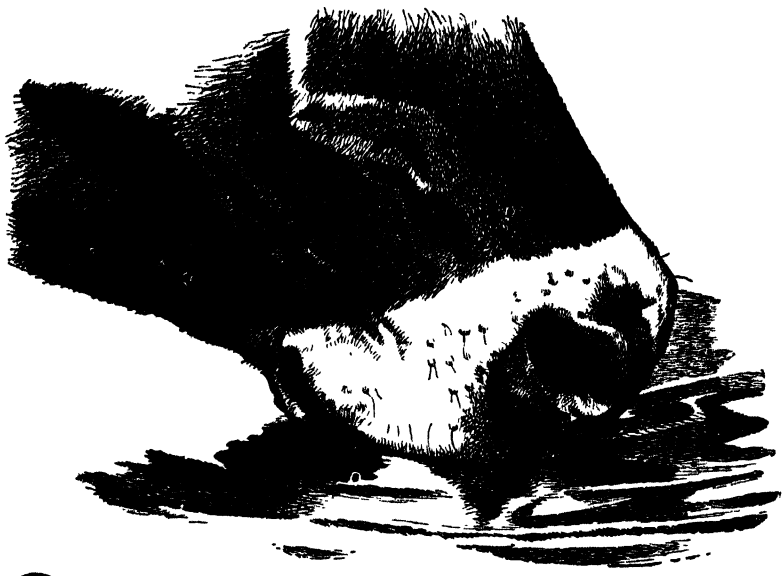
Principles of Breeding.

In the scope of this publication it is not possible to go into great details concerning the principles underlying the breeding of livestock. There are many books dealing expressly with the subject which cover it thoroughly. In order, however, to understand properly the production of livestock, some knowledge of the principles of breeding is necessary.

The Cell.—The animal body is composed of myriads of cells. The cell forms the basis of breeding because each cell contains the characteristics of the animal. The cells of the animal are semi-fluid portions of living matter and are surrounded by a membrane. Each individual cell within itself contains a portion known as a nucleus. Within each nucleus are a number of threadlike bodies known as chromosomes, the number of each in a cell being constant within each class of animal, but may differ with the various classes. For instance man has 48, swine 38, cattle 60, horses 60, sheep 60. Of recent years considerable attention has been paid to the question of chromosomes, and it is now definitely known that they play an important part in heredity and the determination of sex.

The Reproductive Cell.—Reproduction is carried on by the union of two cells, one from the male and one from the female. These cells are very different in appearance, the male cells or sperm being microscopic in size, while the cell of the female which is termed the ovum, is very much larger. The sperm cell is often rather oval in shape, and has an appendage termed a flagellum by which it is able to move, and unite with the female cell or ovum, which act is known as fertilization. Each reproductive cell carries characteristics of the animal of which it is a part, and in the union of the two cells these characteristics are combined to produce the new individual.

Variation.—Progress in livestock breeding depends on variation and the breeder soon learns that no two animals are alike in all respects. While twins are thought to be similar, even like twins have some variations. Upon variation depends the success or failure of the breeder, and unless he has a definite type in mind to which he is breeding, and



GOOD FEED DOES IT!

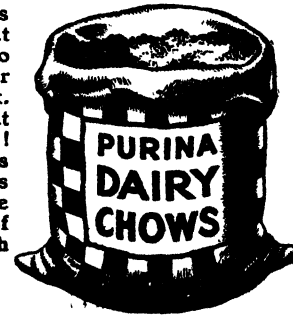
LIKE THE OLD STORY OF THE HORSE...when you can bring your cows to water...and *make* them drink all they should...then you've done something! Something that will show up in your milk pail...something that will show up in your pocketbook!

Water is as important as feed to a cow. Your job is to give her the kind of feed which will make her drink! Purina Dairy Chows! Milk is made of much water...and water is cheap!

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selects for that type, he will find a great variation of animals in his herd or flock.

While it is true that the breeder will notice variation in his animals to be always evident, if he knows the makeup of the breed with which he is working, he will soon learn the possibility of variation within the breed, and come to know which characters are dominant and which are recessive. The purer in breeding the animals are, the less possibility of variation there is likely to be. The old saying that "like begets like" may be slightly modified as it is safer to say "like tends to produce like," in that certain characteristics appearing in the parents are not always evident in the offspring.

To the layman, two sheep may look exactly alike in every respect, but to the trained breeder some difference will be noticeable. Again, two horses may look alike and be of similar breeding but one may be able to pull a much heavier load or cover a certain distance in much less time than the other. Perhaps the greatest variation is noticed in the case of dairy cattle. Two animals may be of the same breed, and in general appearance bear a resemblance, but their production may be very different, as may also be the richness of the milk they produce.

Again, it will often be found that animals from the same ancestors will be found to vary greatly, perhaps not so much in general appearance such as colour, but in their inherent qualities such as milk production in the case of dairy cattle. It is evident, then, that there may be more than one kind of variation. As a matter of fact there are two, one which is transmitted by the parent to the offspring or which is inherited by the offspring, which is called inheritable variation, and the other kind which is not passed from parent to offspring which is termed non-inheritable variation.

Inheritance.—As the sire and dam of an animal contribute equally to that animal, it is necessary that attention be given to their selection. The following table shows the amount of blood carried by the animal from the various parents:—

From the parents	First Cross	50%
From the grand-parents	Second Cross	25%
From the great-grand-parents ...	Third Cross	12.5%
From the great-great-grand-parent ...	Fourth Cross	6.25%

From the above figures it will be seen that the greatest influence on the offspring is exerted by the immediate ancestors and the further away the ancestors are from the original offspring the less influence they exert. As will be seen later in the study of pedigrees, ancestors several generations removed, have little influence on the offspring, since in the fourth cross the animal carries only 6.25% of the blood of its great-great-grand-parents. As the animal carries 50% of each of the parents, it is of vital importance that the parents selected be true to the type for which the breeder is working.

Heredity.—The term heredity is often described as the tendency of the offspring to develop characters similar to those found in the parents, or in other words may be defined as resemblance based on descent. By this is meant that the animal will bear a distinct resemblance to the parents from which it came, and although the resemblance may be more towards the original parents, it is often found that resemblances to the grand-parent make themselves evident.

Selection.—Heredity does not sort out or select between the desirable characters of the ancestors, and those which are undesirable, with the result that the offspring may possess either or both.

It is here that the important factor of selection must be considered, and in carrying out the process of selection, the breeder has at his disposal one of the strongest weapons for the improvement of his stock. The effectiveness of such a weapon is, however, lost if the breeder has no idea of the type for which he is breeding. Selection must be made along definite lines if progress is to be made, and it is vitally necessary that the breeder have a thorough knowledge of the breed with which he is working, as he must concentrate on the transmission of the desirable characters and eliminate as much as possible those which are undesirable.

Selection is a controlling factor in the improvement of livestock as the breeder selects only the superior animals, discarding those which do not come up to the standard.

The Basis of Selection.—As has already been mentioned, animals vary considerably in their makeup, even within a breed. While this may be considered a disadvantage in some respects, it plays a most important part in animal improvement, since if the characters did not vary and were always the same, no improvement could be made.

Taking into consideration the vast number of variations which the breeder is likely to find in his animals, it is very necessary indeed that he have a definite standard for his selection. Animals coming up to the standard should be kept and used as breeders, those which do not, should be discarded. In the case of dairy cattle the breeder may decide to set his standard for production at 10,000 pounds of milk per year, keeping only cows which will produce that quantity. In the case of beef cattle, he may set his standard to include only animals which will mature within a certain time, in the case of pigs he may also select for early maturity, keeping only those which will put on 200 pounds at 10 months from birth. The breeder can only improve his stock by breeding to a certain standard. By having such a basis for selection, and keeping accurate records of his stock he can at any time determine just what progress he is making in his breeding operations.

Environment.—While the animal has certain inherent characteristics, which, under normal conditions will appear in its offspring, it is true that environment has the ability to change not only the general appearance of the animal, but also the abilities of the animal. In the tropics it has been found that animals imported from colder climates tend to produce offspring of smaller size than the parents, and such animals do not have the constitution and ability to withstand adverse conditions. For this reason it is necessary to bring new blood into the herd or flock from time to time. The animals generally found in the tropics are smaller in size than those found in colder climates, despite the fact that they may be from parents which have both been imported. This may be due in part to the climate and the lack of feeds high in protein, which does not allow them to make the development they should.

In the case of dairy cows in the tropics, it is the exception rather than the rule to find very high producing individuals, despite the fact that they may be well bred and well fed. Dairy cattle breeders in the tropics will have to give up the idea of securing cattle of such high production as those raised in a temperate climate, and be content with a good average production combined with the ability to resist tropical conditions and disease. The latter are as important as the former to the cattle raiser in the tropics, as disease takes a large toll every year.

The majority of breeds of livestock originated in the temperate zone, and have been bred under temperate conditions for centuries. When brought to a hot climate such as found in the tropics, where weather conditions are extreme, the effects of environment can be readily seen, and it must be borne in mind that when animals are taken from their natural habitat and placed under conditions which are entirely different some change is bound to occur. Systems of breeding, feeding and management must be modified in order to comply with the changed conditions.

(To be continued.)

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FARM YARD MANURE.

By H. C. Miller.

The Jamaica Planter to-day is very much alive to the necessity for replacing in his land the supplies removed from time to time by crops or by insufficiently controlled agencies such as erosion and leaching.

There is a deplorable tendency, however, for our modern agriculturist in his craze for novelty and quick results, to lend far too ready an ear to the enthusiastic, but often exaggerated claims advanced by proprietors of highly advertised chemical fertilizers, and to substitute these products for his old-fashioned but well tried farm yard manure.

The fact that our importations of artificial fertilizers are on the increase is a very good sign indeed but it is only too true that despite this new urge for soil replenishment there is little evidence of greater care and attention being devoted to the proper production, storage and application of what is still admitted to be the most satisfactory vehicle for the conveyance of soil nutrients.

Farm Yard Manure is a composite organic manure—it consists mainly of the solid and liquid faeces of animals intimately mixed with the litter or bedding supplied to the animals. It not only supplies all the four nutrients that a normal soil might lack, viz., Nitrogen, Phosphoric Acid, Potash and Lime, but it contributes what no inorganic fertilizer can supply—the elixir of sick soils—humus.

The quality of Farm Yard Manure is very variable indeed, but 1,000 lbs. of a good average sample should supply approximately 5 lbs. Nitrogen, 3½ lbs. Phosphoric Acid and 5 lbs. Potash. In such a sample, two-thirds of the total Nitrogen and nearly all the Potash would be supplied by the liquid faeces—while the solid faeces would contribute nearly all the Phosphoric Acid and Lime. The bedding and straw being important in the role of absorbents.

The quality of farm yard manure will vary with—

(a) The type of animals that supplies the faeces;
(b) the food fed to such animals;
(c) the work done by the animals; and
(d) most important of all, the methods of storing employed.

It is this factor which determines to a great extent the fertilizer value of our Farm Yard Manure and without doubt there is much room for improvements in this regard on the large majority of our farms.

Any attempt at producing good farm yard manure, should aim at the elimination of the following deteriorating agencies:—

(i) Draining away of liquid portion of manure.
(ii) Dilution of the manure heap by rain, etc.
(iii) Leaching of Liquid Manure through a pervious floor.
(iv) Evaporation of volatile constituents of the manure heap.

We have seen that the liquid faeces alone in an average sample of Farm Yard Manure are responsible for two-thirds of the total Nitrogen and nearly all the Potash. The following figures worked out by the German authority Wolffe will illustrate this point more clearly:—

1,000 lbs. Fresh Dung Contain:

Animal.	Water. lb.	Nitrogen. lb.	Phosphoric Acid. lb.	Potash Lime, etc. lb.
Horse .	760	5.0	3.5	3.0
Cow .	840	3.0	2.5	1.0
Pigs ...	800	6.0	4.5	5.0
Sheep ...	580	7.5	6.0	3.0

1,000 LBS. FRESH URINE CONTAIN:

Animal.		Water. lb.	Nitrogen. lb.	Phosphoric Acid. lb.	Potash Lime, etc. lb.
Horse	...	890	12.0	—	15.0
Cow	...	920	8.0	—	14.0
Pigs	...	975	3.0	1.25	2.0
Sheep	...	865	14.0	0.5	20.0

The loss of 1 lb. of urine is, therefore, a far more serious matter than the loss of 1 lb. of dung, and no pains should be spared to ensure that none of this precious liquid goes to waste neither by dilution and surface drainage nor by downward percolation. Your manure heap should have a good roof, a floor that allows the minimum of percolation and should be so built that there is no risk of dilution or loss.

At present it is the exception rather than the general rule to find a manure heap that does not smell of Ammonia. A smell of Ammonia from your manure heap indicates a continuous loss of nitrogen by evaporation. Such loss is usually caused by a rise in temperature in the heap itself occasioned by:—

(i) Too little Liquid in the heap.

(ii) Non-absorbtion of the Liquid portion of your manure by the use of an insufficient supply of litter.

Control of these factors and consequent prevention is the best treatment but the addition of chemicals (e.g., Super-Phosphate—1 lb. per animal daily) evenly distributed will be found an efficient cure and will at the same time increase the value of the manure as a Phosphatic Fertilizer.

When we consider that a well fed cow produces approximately 9 tons of solid and 3½ tons of liquid manure per annum, we will appreciate that the annual wastage of valuable plant food in this country must reach alarming proportions.

In these days of stern competition, farmers can only win out if they adopt methods to ensure the most economical production of their crops and without doubt in the war on waste one of our major fronts will be protected if farmers will realise that artificial fertilizers can be regarded not as satisfactory substitutes for, but merely as supplementary to Farm Yard Manure.

AUTHORIZED PERSONS.

Return of arrests to quarter ending 30th September, 1937.

St. Andrew	...	..	...	1
St. Thomas	...	...	...	8
Portland	...	...	...	5
St. Mary	...	...	...	17
St. Ann	...	...	...	3
Trelawny	...	...	...	7
St. James	...	...	...	3
Hanover	...	...	...	1
Westmoreland	...	...	...	5
St. Elizabeth	...	...	...	4
Manchester	...	...	...	8
Clarendon	...	...	...	22
St. Catherine	...	...	...	8

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PIONEER CHICK SCRATCH

From 6 or 7 Weeks to 4½ or 5 Months
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From 4½ or 5 Months on
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PIONEER SENIOR SCRATCH

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Feed same as above but use PIONEER BATTERY Chick Mash in place of Pioneer Chick Mash and PIONEER FATTENING MASH in place of Pioneer Growing Mash and Pioneer Laying Mash

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Pioneer TURKEY Grower

Pigeons:

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CURING BEEF AND A PIG.

(Paper read at the Forty-eighth Congress of the Agricultural Bureau, September, 1937.)

[MRS. M. C. GEORGE, Coonalpyn Branch.]

BEEF.

To cure beef, a simple way is to put about 12 gallons of water in the pickling cask, ¼ lb. of saltpetre, 3 lbs. of brown sugar, and enough salt to float a fresh egg. This should corn 150 lbs. of beef if packed correctly into the cask.

Before putting the meat into the solution, rub it well with dry salt, and bone any ugly pieces. Do not bone the brisket, but joint it, and rub well between the joints with salt. This will make the meat very much sweeter. Done in this way it will be ready to eat in about 7 or 8 days, but should last for a month without the brine going off. If liked, spice can be added to the brine.

CURING PORK.

Take a pig weighing about 120 lbs., cut it up, and trim the legs and shoulders for hams, making into nice, round shapes.

The fitches or sides should be rubbed with the following mixture of salt, saltpetre, and sugar:—Take 12 lbs. of salt, 8 lbs. of sugar, and 1 lb. of fine saltpetre (pound the saltpetre to make it fine), mix thoroughly, and then thoroughly rub each ham. This is important.

Put the cheeks, the hocks, and any trimmings from the pig into the pickle with the shoulders, hams, and sides. This will make a brine, and the bacon should be turned at least every other day.

The trotters, cheeks, hocks, and pieces should only take a few days, and should be ready for use at the end of a week. The bacon takes about 3 weeks to cure, then it should be taken out of the brine and dried ready to smoke. The hams take about four weeks, but this, of course, will vary according to size. When drained they are ready to smoke. After smoking, which should be done with sawdust, tie up in calico bags, and keep in a cool place. When there are hungry men about for breakfast, home-cured bacon will not keep very long.

(Journal of Agriculture, South Australia, October, 1937.)

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BARKING OF TREES.

By C. V. Atkinson, Instructor, St. Ann.

It is regrettable as one travels to see promising timber trees either directly killed by barking or their growth greatly hampered and valuable timber spoilt. Recently I saw a tree which according to the owner, was about fifty years old. This tree has suffered from the effects of barking from it was a sapling; the very roots in some places have been barked. Naturally this tree, though old, had very little lumber to it, and what it had was being attacked by termites and other insects.

Causes of Barking:

There are two chief reasons for barking:—

To procure dyewood for sale for cleaning floors.

To supply to a tannery for use in tanning hides.

By the time the tree is barked a couple of times to supply the needs of the local market, a good and promising tree is ruined, and this for the sake of bark valued at less than a shilling.

For use in tanneries, the entire tree is cut down in its undeveloped stage and the bark removed, the lumber left being useful only for fire-



Barking of Valuable Timber Trees.

wood. It sometimes takes as many as four trees to produce enough bark to weigh a hundred pounds, and this is sold for 1/6 or 2/-.

Effects of Barking:

1. The prospect of getting a good tree is blighted for all times.
2. Valuable timber is destroyed as insects and termites avail themselves the opportunity of attacking the tree where the bark is removed.
3. If the sapling lives and grows, it takes more than twice the normal time to develop if it has been barked on different occasions, which is generally the case.
4. Due chiefly to this evil practice, our valuable timber trees like mahogany, are getting extinct.

REMEDIES SUGGESTED:

1. Substitutes must be found for cleaning floors. In this direction, Salindine and Sour Oranges are useful.
2. Owners of tanneries must find and use substitutes for tanning hides.
3. Stains can be bought for staining floors and furniture.
4. The Law relating to the Prevention of the Barking of trees must be enforced as educational propaganda is slow, and in the meantime, the destruction of trees proceeds apace. What teaching fails to do in twenty years the Law may accomplish in one.

The time has long past since it should be realised that it is an economic waste to destroy in a few minutes, for a small sum, a valuable tree which it has taken years to grow.

Unless urgent measures are taken to stem the tide of this great evil, the day is not far off when many of our valuable timber trees will become extinct.

BUDDING OF LIMES.

By C. M. A. ROBOTHAM, Instructor.

Part of the programme of many planters now seriously engaged in the extensive cultivation of limes, calls for budding on to sour stock. Being in a lime-producing area, I have been approached so often with the request for the best methods of budding limes with satisfactory results, that I am prompted to state the results of my experience here.

Where limes are concerned, it would appear that the chief factors for success are the proper selection of budwood, and the duration of the period prior to the 'loosening up' of the beds. Best, and highly satisfactory results have been got from budwood selected from the last period's growth—i.e., at the end of the branch—which has 'hardened up.' Select such bud-wood from robust growth, just when the buds have swollen at the 'root' of the spines and are about to 'burst.'

The tendency of the buds is to lift from the stock, at the bottom or side of the incision made in the bark to admit them. In some instances the tendency persisted even after the buds were kept bandaged for a month. Where the budding is extensively done, raffia may be the best bandaging material to be used, as if necessary it can be left to break under the influence of weathering, thereby allowing sufficient time for the bud to make a proper and complete union with the stock.

Here is a case which might be of interest: Student Ken Morrison of the Technical School was home on holiday. I gave him a first lesson on budding—he had no previous experience—in connection with one of the nurseries I am supervising. Following the lines above-mentioned, he got 738 successes out of 1,033, approximately 75%.

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THE POTATO AND ITS VALUE.

Potatoes may be used widely, for their mild flavour does not become tiresome, and they are wholesome and easy to prepare. The potato contains valuable proteins, minerals, and vitamins, in addition to its starch; so that it need not be a forbidden food for persons on a reducing diet, provided it is properly balanced with milk, meat, fish or eggs. In comparing the value of the potato with cereal foods, scientists have found it has a better muscle-repairing content. It is very high in alkaline salts, which are needed to offset the acid salts of meats. It is fair in iron, low in vitamin B, but high in vitamin C, and it contains one of the easiest starches to digest. Vitamin A, it will be remembered, is very important, as it gives increased resistance to infections. Vitamin B determines the quality of the appetite and prevents poor nutrition conditions. Vitamin C, in which the potato is rich, prevents scurvy.

While the iron in potatoes is not high, yet if they are eaten in liberal quantities, the iron becomes of value. The potato is also low in lime salt, but this is easily supplied by using plenty of milk when serving potatoes. The high vitamin C value of the potato has been known for many years. In the famines in Ireland—when potatoes were the only food—there was no scurvy; also in the days of sailing vessels, it was commonly known that when ships had a plentiful supply of potatoes the sailors never suffered from scurvy.

Potatoes Build Muscles.

In several studies made with adults who were fed a uniform diet including potatoes to the extent of 2 lbs. to 2½ lbs. a day, body weight stayed nearly constant, digestion was good, and people did not tire of the diet. These studies indicated that the potato is able to sustain the body in a state of nitrogen balance, so that even in muscle-building this vegetable is a distinct aid in the diet when costs must be considered.

In comparing the value of the potato with wheat bread, one 3 oz. potato is equal to 2 slices of white bread; or 10 medium sized potatoes equal to a 1 lb. loaf of bread. The main heat-producing value of the potato is in its starch, which has been known as one of the most satisfactory of starches for human food. It is of interest that in human feeding, where the potato is used as one of the main foods, even up to 2 lbs. or 3 lbs. in the diet, steaming was found most satisfactory for the long period, but the potato lends itself to all methods of cooking. The problem is to reduce the quantity of mineral loss by safeguarding the methods. In careless preparation and cooking, as high as 30% of its food value may be wasted. This loss is greatest in muscle building material (protein) and in mineral matter. For example: (1) peeling and slicing the potato and allowing it to stand a long time in water before cooking, waste the protein and mineral matter; (2) placing the peeled potato without previous soaking in cold water and bringing the water quickly to boiling point wastes protein and mineral matter; (3) placing the peeled potato at once in salted boiling water, and boiling the water rapidly results in less protein and mineral matter; (4) baking or steaming the potato with the skin on, wastes none of the protein or mineral matter. If roughage is needed in the diet, baked potatoes should be eaten with the skin on; (5) cooking the unpeeled potato without water in a heavy covered vessel over the direct heat, destroys neither protein nor mineral cooked. The rule should be to boil or steam the potato and remove the skin after it is cooked. Then it may be cut into the form appropriate to any of the ways in which it can be served. If peeled and cooked in boiling water, the water in which it is cooked should be used with the potato or used in making soup or in making

bread, because the water in which it is boiled may contain 30% of the protein and 30% of mineral matter.

The most wasteful method of preparation and cooking may mean a loss of over half the protein and over two-thirds of mineral matter. Potatoes of medium size should be baked 30 to 40 minutes to make them mealy. Large potatoes should be boiled for 5 minutes and baked in a hot oven for 40 minutes. If the skin of the potato is rubbed with fat and then baked slowly in a moderate oven 50 to 60 minutes, it will make the skin tender and edible. Baked potatoes must be broken open as soon as tender. Too much cooking will—because of confined steam—make the starch sticky and the potato soggy. When potatoes are baked and the family is not ready for them, the potatoes may be cut in halves, and the mealy centres removed, beaten smooth with cream or fat, returned to the shells and kept warm in the oven. To boil potatoes, place washed, but unpeeled potatoes in salted boiling water (1 teaspoon of salt to 1 quart of water). Boil 20 to 30 minutes or until easily pierced with a fork. Drain the water. Heat the potatoes in a dry vessel until all water is evaporated from the surface. Remove skins and prepare according to any rule for cooked potatoes. To steam potatoes without peeling, the process must be continuous and rapid for about 30 minutes. When tender, they should be removed from steam and dried in a hot oven. They are then ready for further preparation before serving, or they may be served in their jackets. The potato being mild in flavour, lends itself to varied uses with other foods. Because of its potash salts, common salt must be used in the cooking, because it is vital that the two salts should balance each other in the normal human body.

(*Journal of Agriculture, South Australia, October*, 1937.)

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MARKETING NOTES.

(From Monthly Reports on the Produce Markets by Messrs. Gillespie Bros. and Co., Ltd., London, 30th October 1937.)

COFFEE:

During the past month the market has continued very quiet with only a small business passing, as buyers have been holding off. A few new arrivals of Kenka ordinary quality have been selling at from 60/- to 63/6 for average size, and a small parcel of London cleaned Tanganyika has sold at 69/- for first size.

Brazil market has again been easier, and superior Santos is quoted at 47/- cost and freight against 51/- a fortnight ago.

GINGER:

There has been a pause in the demand during the last two to three weeks, owing to the lack of support from the consumers and with holders anxious to make progress, values have declined about 2/6d. per cwt. There are sellers at 60/- to 85/- per cwt. on the spot in London for the small No. 3 to the fine bright bold No. 1.

PIMENTO:

The market has continued quiet, but very firm, and with a better demand from the Continental buyers, offerings from Jamaica have been absorbed at from 68/6d. to 69/6d. c.i.f. Hamburg for October shipment, and 70/- c.i.f. has been paid for parcels afloat.

The demand on the spot in London has been quiet with sellers quoting 8½d. per lb. ex store.

HONEY:

A moderate amount of business has been going on at full rates, but buyers appear now to be satisfied at all events for the time being.

The quotations for Jamaicas remain unchanged at 38/- to 39/- for dark liquid to set amber; 41/- to 50/- for the pale set smooth; 51/- to 55/- for the smooth white set.

BEESWAX:

Is a shade firmer, with Jamaica quality quoted at £6 5s. 0d. per cwt.

KOLA NUTS:

Remain quiet at 4½d. per lb. ex store London.

LIME OIL:

Continues quiet and nominally unchanged at 21/- per lb. for the West Indian distilled.

HIDES:

The market continues quiet but steady and we quote 5d. per lb. c.i.f. as the present value of heavy West Indian wet salted.

COCOA:

During the period under review values of New Crop Accra declined, good fermented on c.i.f. terms ranging from 28/- to 25/9d. since which a recovery has taken place, the market advancing again to 28/- but it has since become a shade easier, closing quotation 28/- sellers.

Quotations from other producing countries are as follows:—

Plantation Trinidad 42/- to 44/-, Cost and Freight per 50 kilos according to mark.

Superior Bahia 27/6d. per 50 kilos Cost and Freight.

The London spot market remains very quiet, with prices tending to sag, owing to lack of support from the consumers. Some small sales of ordinary to fine Trinidad have been made between 55/- to 62/6d.; good to fine Grenadas 50/- to 54/-, good to fine Ceylons are quoted at 56/- to 60/-, and Summer Arriba, 52/6d., selected 55/-.

REPORT ON CORN GROWING DEMONSTRATION, TEMPLE HALL.

(By A. P. HANSON, Supervisor of Instructors.)

This demonstration was conducted on the same acre of land on which was planted varieties of Red Peas (Red Kidney Beans) last December, and subsequently reported on. As stated in that Report, the soil is of medium acidity, and fairly heavy. Temple Hall enjoys generally a heavier rainfall than is usually the case where corn is largely grown. The acre of land yielded 24 bushels of good sound grains. In the circumstances as stated below this should be accepted as satisfactory. The plot was superior to others around and provided a good object lesson. Unfortunately, due to misunderstanding on the part of labouring hands in the Society's Seed Department in Kingston where the corn was sent to be shelled, the consignments were divided merely according to variety, so that the fertilized and unfertilized became mixed. Only half an acre was fertilized. When another experiment is conducted this detail will be published. The following cost of production includes cost of re-planting after one month, owing to drought.

	£	s.	d.
Billing at 9d. per sq. chain	0	7	6
Ploughing, harrowing and rowing	1	0	0
Planting by hand	0	6	0
12 quarts seeds	0	5	0
200 lbs. Fertilizer at 8/- per 100 lbs.	0	16	0
" " transportation and application	0	5	0
Cultivation	0	15	0
Reaping and shelling	1	10	0
Total	£5	4	6

VARIETIES.

Two varieties were planted, both native, being: (1) Dent, (2) Reddish Yellow. The variety referred to as Dent was received through the Instructor for St. Elizabeth, Mr. Lynch. The ears are comparatively short, but the number of rows vary from 14 to 24 and even more. The seeds are soft and floury. The other variety was between red and yellow, not the real flint variety. Maize as a plant is subject to cross fertilization hence this mixture.

PLANTING.

On the 31st March, ½ acre was planted out with Dent corn, and ½ acre with reddish yellow. On the 1st April, similar plantings were made. Unfortunately, no rain fell until the 29th April. The supplying which practically amounted to replanting the whole field was promptly done.

The fertilizer applied to half the field and to two varieties was 4:10:12. This was applied at the rate of 1 lb. to 25 yards of furrow. The soil and fertilizer were thoroughly mixed in the furrows. The furrows were laid out to form rows 3 feet apart. The seeds were planted 1 foot in the rows and covered with 2 to 3 inches of soil. This some-

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what heavy covering suited the dry spell. It may be remarked that when replanting after a month, a large number of the seeds first planted were found germinating. Earthing up or "moulding" was done when the plants were 2 feet high.

Disadvantages.

Corn planted as late as the end of April and the month of May, generally grows vigorously, but the yield is poor owing to the irregular distribution of the seeds over the cobs. As stated above, dry weather compelled late planting.

Many stalks and ears were blown down on two different occasions, by wind. Corn requires a dry period for maturing the ears. The late Summer turned out a very wet one. The husk of the Dent corn affords less protection than the red. In fact the variety is rather delicate, and there was much rotting of the ears through the frequent heavy rains. Wind and rain accounted for fully 20% loss. Normally the yield would have been 30 bushels to the acre.

Following the "moulding" (earthing up) the weeds grew rank and fast. Had funds allowed, the crop would have been benefited by a second weeding. There were a few cases of *Smut*. This is a disease which attacks the cob, transforming it into a shapeless, sooty mass. These were collected and burnt. The incidence of Smut Disease is no menace to the Corn Crop in Jamaica. In fact very little notice is taken of it. It is not generally known that it is a fungus and is spread by spores. The wiser course is not to take any chances but collect and burn when it does occur.

Yield.

The crop was harvested Sept. 14--15.

The Dent yielded	8⅓ bushels.
The Reddish Yellow	15⅔ bushels.
Total .	24 bushels.

Seed Selection.

While on the subject of Corn Growing, it may be well to outline the points to be observed in selecting ears of corn for seed purposes. Not only should the most desirable ears be selected from the crop after harvesting, but each ear must be judged carefully, and the following questions settled:—

Will it germinate? Is it pure?—that is, will the kernels when planted produce ears of the same size, shape, and colour. Will it yield well?

Will it Germinate?

Reject all ears that look as if they will not dry out without becoming mouldy. Discard all ears the seeds of which are wrinkled, dull in colour, or discoloured. Injury from insects is a danger. If corn is weevil eaten it should not be planted.

Is It Pure?

Reject all ears having kernels, that is, seeds of different colour, also ears having kernels of different size; or small undeveloped ones. It is an improvement when the cob is the same colour as the grain, unless difference in this respect is known to be a varietal characteristic.

Is the Shape Desirable?

Ears are not desirable if many of the kernels are not regularly set.

or if the rows are not straight. An ear is preferable when the seeds are so set as to leave a cavity at the "butt" end. The kernels should retain their size and shape well towards the butt. The *tip* should prefereably be entirely covered with kernels. A pointed ear has many irregular-shaped kernels at the tip, the sign of poor yields. The circumference or girth of a short ear measured one or two inches from the butt and one inch from the tip should not differ to the extent of more than 1½ inches between the points measured.

How much will it Yield?

Length: For the best yield discard all ears less than seven inches long. It is better to have the ears that are over eight inches long.

Girth.—An ear which is seven to seven and a half inches long should be at least six and one quarter inches in girth, but not more than seven inches. An ear eight to nine inches long should be at least six and a half inches in circumference, while a length of nine inches and upwards calls for a circumference of seven inches and upwards.

Depth, etc., of Grains.

Deep rectangular kernels placed so close together that they cannot readily be moved by passing the fingers over them are sure signs of high yield.

Fifty average well-shaped kernels will weigh an ounce. An ear containing fourteen rows with 40 kernels in each row will have 560 kernels. This is at least 11 ozs. of seeds for planting, and less than six ears to the quart. The irregular shaped kernels at butt and tip should not be planted.

REMARKS.

For some of these interesting points I first became indebted to a "Circular" issued some years ago by the *Porto Rico Agricultural Experimental Station*. Anyone who will take the trouble to test them out will find them delightfully accurate and practicable. We need to apply them in Jamaica to save our best varieties.

IMPORTED VARIETIES.

Up to the present I know of no pure bred variety imported that has proved a success except for purposes of cross fertilization. As a rule the imported corn arrows in much shorter time than the native. The period should be timed, the native planted first, and the imported planted after, between every two rows of native so that all arrow together. In this way the native partakes of the quality and character of the imported.

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REPORT ON COFFEE IMPROVEMENT COMPETITION—GINGER RIDGE.

By W. L. SHIRLEY, Instructor for Clarendon.

The Competition has been conducted under the auspices of the Ginger Ridge Branch Society to foster increased production of high grade coffee, and to ensure consistency of supply of the product to the local "Marketing Pool" conducted by the Ginger Ridge Coffee Association.

This Competition has earned popularity by the influence it has reflected on the establishment of an organized Coffee Industry in the locality, and by its contribution to co-operative marketing, further enhanced by the Welfare Cup generously donated by Messrs. Lascelles deMercado and Co., Ltd., produce merchants of Kingston, and by the liberal support of the Jamaica Agricultural Society.

As indicated by the name, the findings of the Judges are based primarily on improvements over a period during which the plantations have been repeatedly judged.

The first Judging took place in April, 1936, when the fields should have already been re-conditioned for the 1936-37 season.

The final Judging came off in August last, with plantations in full bearing just before reaping began; thus, improvements of a permanent nature would be much in evidence.

The holdings competing are arranged as follows:—

Class I—Over 3 acres in cultivation.

Class II—3 acres, and under.

The Competition started with 15 Competitors and finished with 11—three having withdrawn and one having died during the interval.

The plantations judged varied in age from a few years to more than twenty years, and covered an acreage of over 50 acres.

By far the weakest features observed were those which had their effects in overcrowding of the "walks," erosion of the soil, and in the poor quality of the beans. These included spacing, trenching, and pruning. Much more was expected where arrangements for curing and storing were concerned, as well as in the procuring and proper use of equipment.

There has been marked improvement along lines of Field Sanitation on a few of the plantations, but this could be more general; the same applies to the liberal use of manure.

Much interest was displayed in the judging, by Competitors and others who followed the Judges from holding to holding. The value of this cannot be over-emphasized. The benefits from the Judges' comments—pointing out weak features and advising on their correction, and commending successful efforts, directed towards them, are bound to reflect favourably on the Coffee Industry of the area.

Mr. C. S. Byles, Agricultural Instructor for the district, was in attendance on both occasions of judging.

Marks were allotted as follows:—

	Marks.
(a) Cultivation (including Tillage, Manuring, Trenching and Mulching)	150
(b) Field Sanitation and Pruning (including cleaning, spacing and shading)	150
(c) Fencing, Tools and Equipment (including arrangements for curing and storing)	100

The award of marks is set out in the following Table:—

Schedule of Marks.

Class I.

No.	Name.	Aggregate.	1st Judging.	2nd Judging.	Nett Improvement.
1.	Septimus Coleman ...	400	201	254	53
2.	F. R. Ricketts ...	400	218	266	48
3.	T. W. Jackson ...	400	154	201	47
4.	Robert Elson ...	400	213	256	43
5.	H. G. Coleman ...	400	190	218	28
6.	Oswald Coleman ...	400	137	153	16
7.	Mrs. Maria Thompson	400	123	138	15
8.	E. N. Thompson ...	400	195	201	6

Class II.

No.	Name.	Aggregate.	1st Judging.	2nd Judging.	Nett Improvement.
1.	David Strachan ...	400	138	201	63
2.	Clunie Richards ...	400	127	182	55
3.	James Drake ...	400	125	152	27

BRANCH NOTES.

CLARENDON: Brixton Hill.—Meeting held 11th November. Present: Mr. H. A. Allison, 3rd V.-P. presiding, eight other members and two representatives of the Juvenile Branch. Several matters arising from the Minutes were discussed. A few important letters were read and discussed. An explanation of "Warning to Cane Cultivators" was given by the Secretary. A Report from the Juvenile Branch was read by Master Brenton Bartley, who was heartily thanked. The Secretary told of a tree planted on Peacemaker's Day, and asked members to look forward to an annual "Arbour Day." Meeting terminated with the singing of the National Anthem.

D. O. Haase,
Secretary.

Mocho P.O.

Elgin.—Meeting held 28.9.37. The 1st Vice-President presided. There were present: 25 members and one visitor. After the usual preliminaries the following matters were dealt with:—1. Letters from the Parent Society regarding (a) affiliation of the Branch, (b) Authorised Persons; (c) "Warning to Cane Farmers", (d) Inability of Secretary to attend inaugural meeting in August. 2. Roads: Resolution re a driving road into the district. 3. Resolution re the urgent need of a District Constable for the district. This was unanimously carried. 4. Authorised Persons. It was agreed not to appoint any new ones now, but to await the transfer of two men of the district, who are working under another Branch. 5. Discussion on ways and means of controlling the Black Ants Pests. It was decided to refer the matter to the Instructor. 6. Animal Caring Competition. It was decided to drop consideration of this competition for this year. Members promised to report at next meeting on the possibility of a Pig Rearing Competition. 7. Fees were then collected and the meeting ended with the singing of the National Anthem.

T. Alex. Hall,
Secretary.

Thompson Town P.O.

Rock.—Meeting held on 21.11.37. Present: Mr. Henry D. Coleman, 1st V.-P., in the Chair, Mr. A. L. Virtue, Instructor, and over 150 members and visitors. The chief aim of the meeting was to get up a list of the intending purchasers of Caggos Pond, Runeford, and McGilchrist Pen, with the number of acres required, to forward to the Hon. J. A. G. Smith, K.C., M.L.C. for Clarendon, re Land Settlement. Instructor lectured on Co-operation in Agriculture.

H. Dingwell Thomas,
Secretary.

Osborne Store P.O.

Rock River.—Meeting held 25rd September. The attendance was the largest ever had since the inauguration of the Society in the district, there being present, Instructor Jones, 27 members and visitors and 37 Juveniles. The formalities of the meeting were adhered to, and other important matters were dealt with as follows:—1. Juvenile Debate—resolved that the pig is more remunerative than the goat. The pig won on decision. 2. Instructor's Address, his subject being the Importance of Agriculture, and also expressing his pleasure at the fine gathering. 3. Report of the Half-Yearly Conference of the S.M.B.A., held at Highgate on June 26th. 4. Discussion re the holding of a competition for members of the Society, on the best improved holding

of 2 squares, at least, (around the home). 5. Enrolment of new members—upwards of 12 visitors gave in their names as prospective members. Of this number, seven paid up ther subscriptions. 6. The Roll Call. The meeting then terminated with the singing of the National Anthem.

E. ST. GEO. ANDERSON,
Hon. Secretary.

Mt. Regale P.O.

ST. ELIZABETH: Pepper.—Meeting held 17th November. Present: Rev. Wright, V.-P., who occupied the Chair, several members and 8 visitors. The Supervisor also attended. Instructor Lynch addressed the meeting on "erosion." He showed how better conditions can be obtained. The Supervisor followed on similar lines, spoke on erosion, also planting of trees. Both Instructors stressed the value of planting useful timber trees. Delegates to the meeting of the Branches Associated were appointed. It was decided to have the Penny Bank resuscitated.

(Mrs.) M. A. ATKINSON,
Secretary.

Pepper P.O.

Siloah.—Meeting held 30th Sept. Among those present were Mr. S. L. Blair, Pres., Mr. M. N. Thompson, Agricultural Instructor, nine members and four visitors. The subject of the Black River menace to cultivations in the district, was again brought up. Mr. Williams had the assurance of the Hon. Member for the parish that it would be dealt with at the next session of the Legislative Council. Re proposed amalgamation Scheme, it was decided not to consider it, as another had been propounded at the last Half-Yearly meeting and is now on trial for a year. The members of the Aberdeen Branch having placed the use of their Saanen Ram at our disposal, members were advised to send their nannies thereto. The Instructor delivered an inspiring lecture on Leaf Spot disease of bananas. After distribution of Golden Glow corn seeds, the meeting adjourned.

E. L. PENNICOTT.

Siloah P.O

ST. MARY: Baxter's Mtn.—Meeting 16.11.37. After the usual preliminaries the Highgate Conference was discussed and Messrs. Strachan, Phillips and Dryden were asked to represent the Branch. Two Authorised Persons reported. Members reported adversely on corn they had planted. As all the trees for Treeplanting Day could not be procured in time owing to rains, only a few were planted. Discussing "Other Matters," the President thought the Branch should make some effort to procure either a coffee mill or a cane mill for use among its members. The meeting was brought to a close in the usual way.

R. J. LAWSON RICKETTS,
Secretary.

Annotto Bay.

Epsom.—Meeting 6.10.37. Present: A. C. Gibson, President; Instructor D. A. Jones and 10 other members. As arising from the minutes, the water supply question was further considered. Re proposed picnic the House decided to have a concert instead. Three delegates were appointed to attend the meeting of the St. Mary Branches Associated and other members promised to attend. Four Authorised Persons were present. There was a suggestion that 1 acre of land be rented for the planting of vegetables. It was also suggested that a petition be sent to the manager of Grav s. Inn Central Factory, asking for the sale of the Garden Hall Woodland. Minor matters were dealt with and the meeting terminated with the singing of the National Anthem.

FRED A. EDWARDS,
Secretary.

Annotto Bay P.O.

Upper Metcalf.—Meeting held October 20. Present: Mr. D. Jones, Instructor, Mr. J. Wheelam, 2nd V.-P., presiding, and 14 members. There was a short debate on the demonstration plot. It was decided that a variety of vegetables be put in. The standing orders were waived in order to give expression of sympathy regarding the death of Mr. G. Morrison, an active member of the Branch. On resumption, the Instructor spoke on the advisability of the members of this Branch launching out with a vegetable campaign, seeing the suitability of the soil around, and to be in line with other progressive areas. Several members gave in their orders for vegetable seeds. The Instructor next advocated the planting of trees. Several orders were given to obtain these for planting on November 9. Members were also encouraged to get away from the old varieties of Tobacco, and introduce the new one that was being experimented on. Under financial matters, it was agreed that the Branch be affiliated with the parish association of Branches. Minor matters were dealt with, and the meeting adjourned with the National Anthem.

(Miss) E. I. HYLTON,
Reporting Secretary.

Brainerd P.O.

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Richmond.—Meeting held 22.10.37. Present were: Mr. Julius McIntosh, President and eleven other members, also the Instructor, Mr. D. A. Jones. Arising out of the minutes, the matter of pineapples was deferred for next meeting. The election of delegates for the Highgate Conference resulted in the appointment of Mr. J. McIntosh, Mr. S. A. Officer and Mr. S. A. Lindsay. The Instructor spoke emphatically on the planting of vegetables and the necessity for such. He also instructed the Branch to send in their orders for tree suckers for planting on the 9th November next, offered by the Government through the J.A.S. He further distributed seedlings of Silver Glow corn to members present, to be planted this season. He pointed out that this variety of corn is rich in meal quality. Other matters of importance were discussed. The singing of the National Anthem closed the meeting.

S. A. OFFICER,
Secretary.

Richmond P.O.

Try-All-Hill.—On Sept. 17 a special meeting was held. Associated with the President and Secretary on the platform were: Messrs. C. L. A. Stewart, President of the St. Mary Branches Associated; W. S. Robinson, President of the Wood Park Branch; C. V. Turnbull, Secretary of the Central St. Mary Branch; and A. D. Jones, Agricultural Instructor. Inspiring addresses were delivered by the abovenamed gentlemen. Among the salient points in these addresses were: the usefulness of the Agricultural Society, self-respect, ambition, independence in every-day life. After each address the musicians present entertained the House. The House was full to overflowing. Sixteen new members were enrolled, thus making the total number 54. An interesting sketch was given by the Secretary. After the votes of thanks were tendered, Instructor Jones made a few comments on the various names in the district and what each stands for. The Instructor then announced that samples of different varieties of corn could be obtained from him on application. The singing of the National Anthem brought the meeting to a close, after which refreshments were served.

E. ALBERT EVANS,
Secretary.

Annotto Bay P.O.

ST. CATHERINE: Bellas Gate.—Meeting held 8th November. Present: Mr. G. V. Markland, President. Routine matters were dealt with. Twelve other members and a few visitors. There was a discussion on purchase of a ram, but no decision was arrived at. One Authorised Person reported "all correct". Delegates were elected to attend the meeting of the S.C.B.A. at Bog Walk on the 19th November. The Roll

was called. The President made his closing remarks, and the meeting terminated with the singing of the National Anthem.

A. A. McCURDY,
Bellas Gate P.O. Secretary.

Golden River.—Meeting held 20th Oct., the President and fourteen members being present, despite the almost incessant rains. It was agreed that the Branch be affiliated with the St. Catherine Branches Associated, and delegates were appointed to attend the meeting of the Association at Bog Walk. The Branch also decided to associate with the Parks Road Branch in the holding of a local Show, proposed for an early date in 1938. Two new members were enrolled, and the "Field Day" which the Branch decided to make a regular institution, and which had to be postponed on account of heavy rain, was fixed for the next meeting day, i.e., November 17th. This closed the evening's proceedings and the meeting adjourned.

D. A. ROBOTHAM,
Above Rocks P.O. Secretary.

Top Hill.—Meeting held September 28. Present: Mr. W. R. Wilks, President, Rev. H. Herbert Simpson, 1st V.-P., twenty-eight other members, a large number of ladies who had come out for the formation of a Women's Auxiliary Society, and three visitors. The President then gave a warm welcome to those present. The matter of getting an experimental plot was next attended to. The meeting was informed of the failure of the committee appointed to obtain either of two bits of land that they had in mind, but that there was a third piece which could be got. Members then visited the plot and expressed their satisfaction with the new plot and suitable arrangements were made to acquire same. Rev. H. Herbert Simpson told of his efforts as M.P.B. in the getting of a better water supply for the district and for improved road conditions and of the fruits his efforts had borne. Members expressed their thanks to the reverend gentlemen for his real labour of love. The Roll Call was then taken and the singing of the National Anthem brought the meeting to a close.

E. M. JOHNSON,
Lluidas Vale. Secretary.

ST. ANN: Alva.—Meeting held Sept. 28th. Mr. J. B. Greaves, President, presided. Ten members attended. Routine matters were dealt with. Instructor Robotham gave information on Potato Bug, and an interesting talk on war conditions in Europe. Meeting adjourned with National Anthem.

(Miss) I. A. REYNOLDS,
Alexandria P.O. Secretary.

Irons Mtn.—Meeting held 8.11.37. Present: Mr. S. Steer, President, Mr. C. V. Atkinson, Instructor for the district, and 33 members. The Instructor spoke on the handling of Citrus, and promised to visit Loldings in the village in the coming month for demonstration on pruning. Resolutions to the St. Ann Branches Associated relative to Roads and Water Supply for the village, were discussed. Resolution to the Half-Yearly meeting in January re the establishment of lumber nurseries for the parishes drafted. The Secretary was appointed delegate to this meeting. Minor matters were dealth with and the meeting terminated with the National Anthem.

H. H. BETTON,
Secretary.

Turnberry.—Meeting held September 28. Present were: Mr. Z. Rawle, President, twenty-two regular members and a few visitors. As arising out of the minutes, dissatisfaction was expressed at the delay of the water supply for the district, a very urgent need. The report re the ram, was read by the Secretary and supplemented by Mr. E. C. Allen, the caretaker. A very warm discussion followed, and it was agreed that the ram be sold or exchanged, and a different strain be obtained. The matter was then left in the hands of a committee. A financial statement was also presented and adopted. Correspondence was dealt with, after which a petition re the improvement of the Fargus St. was attended to. As the petition dealt with Crown Lands, it was decided to await the Surveyor General's opinion re the matter, investigation of which was being carried on. New business was dealt with, among which was the desire to see the Law re the selling of produce by under-aged children enforced, as this was responsible for much of the larceny of small quantities of coffee, pimento, etc. A resolution was drafted re the matter. Minor matters were dealt with, Authorised Persons' report was taken, announcements were made and a very interesting meeting terminated with the singing of the National Anthem.

E. L. WELDS,
Blackstonedge P.O. Secretary.

WESTMORELAND: Cairn Curran.—Meeting 12.11.37. Present: Mr. E. W. Prout, President, Mr. F. W. Kelly, Instructor, Mr. Bacquie, Supervisor of Instructors, 10 members, 8 visitors and a number of children. A Juvenile Branch was inaugurated. Mr. Bacquie instructed the children concerning the usefulness of birds, frogs and lizards as the farmer's friends. He also spoke of the usefulness of

vegetables as food and for export. A farewell address was read to Mr. Kelly as a token of appreciation of his valuable service. Delegates were appointed for the yearly meeting of the W.B.A. Au horised Persons reported all correct. Meeting closed with the singing of the National Anthem.

P. A. HEMMING,
Darliston P.O. Secretary.

Darl ston.—Meeting held 15th October. Pr sent: Mr. J. N. McFarlane, President, Mr. G. W. Wray, Agricultural Instructor and several members. The President gave a hearty welcome to the Instructor. He replied promising to do his best to advance the interests of the Branch. One Authorised Person reported "all correct" in his district. The Instructor gave a practical and educative address. He encouraged the planting of vegetables, advised beginning with small plots and enlarging little by little. Also spraying and manuring. He promised to speak on "nutrition" at the next meeting. A hearty vote of thanks was accorded him. The President, Secretary, Messrs. James and Mullings also spoke. Other matters were dealt with and the National Anthem brought a lively meeting to its close.

A. A. McDONALD,
Darliston P.O. Secretary.

Porter's Mtn.—Meeting held November 15. Present were: 23 members and 12 visitors. Mr. D. N. Clarke, President, occupied the chair. As arising from the minutes, the Instructor explained the object and benefit of the Tree Planting Campaign which took place on November 9. He was sorry that the plants did not reach the Branch in time. Correspondence was then dealt with. The A.P.s present reported "all correct." The Instructor at this stage gave an interesting and instructive address on the "Planting and Care of Trees." He was thanked by the meeting. The Roll Call was taken, after which the National Anthem brought the meeting to a close.

D. F. BOWEN,
Ramble P.O. Secretary.

Sheffield.—Meeting held 17th November. Present: Mr. V. Chambers, President, Mr. F. N. Kelly, Agricultural Instructor, 9 other members, a few visitors and some school children. The Secretary spoke of the death of the late Mr. Thomas Campbell, ex-President of the Branch. A short period of silence was then observed and it was decided that a letter of condolence be forwarded to Mrs. Campbell. The President addressed the meeting. Correspondence was read. Four delegates were appointed to attend the Associated Branches meeting at Sav.-la-Mar. Genuine regret was expressed when it was known that the Instructor was being removed from the parish. An Address was read to him and several speeches of appreciation of his work were made. The Instructor thanked all present for their good wishes. He also read from the Gazette re warning to cane farmers, and after a lengthy talk, a vote of thanks was accorded him. A solo was sung by Mrs. Z. E. Chambers, and "He is a jolly good fellow," by all present. Two Authorised Persons reported "all correct." The meeting terminated by the singing of the National Anthem.

SAMUEL M. HALL,
Sheffield. Secretary.

ST. THOMAS: Cave Valley.—Meeting held 10th September was scantily attended. Rev. A. H. Simkle presided. The purchase of a corn mill was suggested and the Secretary was instructed to enquire about the different prices. A Committee was appointed to visit the Ex-Service men on the Monkland lands with a view of getting them to become members of the Branch. Mr. W. Brown read Report of the Half-Yearly meeting at Morant Bay. He received a vote of thanks. As the report was full of interest, the President asked that it be submitted again at the next meeting. The President urged the members to try to be punctual and regular in attendance at meetings.

H. H. WATSON,
Cedar Valley P.O. Secretary.

Golden Grove.—Meeting held 21st Oct. There were 17 members, 4 visitors and Mr. U. A. McLaren, Instructor, present. Instructor spoke about Golden Grove market, and also on the Rhinoceros beetle. Correspondence re Water Supply was submitted, and the matter discussed. Three new members were welcomed. Mr. McLaren gave an address. He spoke on the disadvantages of land room in St. Thomas. He said every spot of land that is available should be utilized. Mr. McLaren wished that all farmers, large and small, should join the meeting and exchange thoughts and ideas. He touched on the Black Spot disease of bananas. Other matters were dealt with and the meeting adjourned.

DAVID DIXON,
Golden Grove P.O. Secretary.

Hagley Gap.—Meeting held on 24th Sept. Mr. John Gordon, President, presided, and there were 16 members present. Mr. T. Orgill reported that materials had already arrived to fix the Pennlyne Tank. A member complained about the late arrival of

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the Agricultural Journals, but the Secretary pointed out that the last issue was for July and August, so there was no cause for complaint, as September had not yet ended. Members expressed themselves freely in connection with the getting of badges and stated that if the Parent Society would not take up the matter, it would be necessary for this Branch to see after it personally. In view of the fact that the Inspector General of Police suggested prosecution of an Authorised Person under Law 53 of 1908, the Secretary was instructed to request the Secretary of the Society to send this Branch a copy of the Law, or publish it for general information in the next issue of the Agricultural Journal A complaint was made about the Woburn Lawn Road, and the Secretary was asked to write to the Public Works Superintendent about it. After dealing with several minor matters the meeting stood adjourned.

J. M. N. GRANT,
Hagley Gap P.O. Secretary.

PORTLAND: Kensington.—Meeting held 19th Oct. Present were: Mr. W. Thomas, President, seven members and Mr. G. R. Graham, Instructor. Correspondence was taken. A word of sympathy was extended to the Instructor by the President regarding his recent accident and illness. The Treasurer's Report was presented as also the report of Authorised Persons. The Instructor gave us a lecture on seed growing, and the transplanting of seedlings. The meeting terminated by the singing of the National Anthem.

T. C. BRYAN,
Manchioneal P.O. Secretary.

Mahoe.—Meeting held 21.10.37. Mr. P. Bendar, 3rd V.-P., presided. Authorised Persons reported several arrests. Secretary gave an address on the planting of vegetables. A vote of thanks was accorded the Secretary for his great interest in agriculture in the district. It was stated that Mt. St. Bernard and Mahoe districts were in need of a D.C. Roll Call showed 15 members present and 1 visitor. This brought an instructive meeting to its close. The National Anthem was sung.

(Miss) SYBIL BAUGH,
Bangor Ridge P.O. Acting for Secretary.

Moore Town.—Meeting held 2nd November. The President, Mr. J. E. Harris, presided and welcomed 10 members, Instructor Graham and a visitor. Members expressed pleasure in seeing Instructor present, and expressed sympathy with him in recent illness and accident. Two Authorised Persons present reported "all correct." The Instructor spoke on the functions of Branch Societies, and Mr. Beswick gave a short and interesting lecture on Tree Planting. Meeting decided to make arrangements for celebrating the 38th Anniversary of the Branch, the Secretary to collect the necessary data covering that period. Agenda for next meeting arranged and meeting adjourned with singing of National Anthem.

T. O. OSBORNE,
Moore Town P.O. Secretary.

Maidstone-Bourbon.—Meeting held Oct. 13. Present: Messrs. N. V. Thompson, President, 9 other members and Mr. Reuben Williams, a foundation member of the Branch. Matters arising from the minutes, including the sale of Mr. Brown's property, were discussed. The matter of the cabbage competition was brought up and it was decided that it was necessary that the number of Competitors be increased before a start be made. The delegate presented his report of the last General Half-Yearly meeting of the Parent Society. Attention was brought to the pollution of drinking water in the district of Bourbon. Three springs were named for protection. The Secretary stressed the danger of using polluted water. Authorised Person Talmerge Brisco reported 2 arrests and 1 attempt. The Secretary was instructed to make inquiries in connection with the two men recently nominated as Authorised Persons. The Secretary was instructed to order two grindstones for the Branch. The

President made his closing remarks and a very lively meeting terminated with the singing of the National Anthem.

I. E. SOMERS,
Secretary.

St. Margaret's Bay.

Portland Central.—Meeting held 23.10.37. Present : Rev. J. E. Reid, President, presiding, Rev. A. B. Mull ngs, eleven other members and one visitor. Secretary was asked to write the Parochial Board to know what steps are being taken in the matter of the water supply for the district. Secretary was also asked to write the M.L.C. re his pending visit to the Branch and to thank him for his help re water tables extension and malaria questions. Condolence to Instructor was voiced re his recent motor accident and consequent illness. Secretary was asked to write Parent Society re price of Citrus, Nutmeg, and Cinamon plants and also price of milch goats. Rev. A. B. Mullings gave an informative address on the care and utility of animals. This address was well received and the Rector was warmly thanked. One A.P. present reported all quiet. Thirteen members responded to the Roll Call. Minor matters were dealt with and a most profitable meet.ng terminated with the singing of the National Anthem.

(Miss) J. A. HARRIS,
Acting Secretary.

St. Margaret's Bay P.O.

St. George.—The Branch held its regular meeting on the 16th Oct. Present : Rev. W. J. Thompson, 3rd V.P. of the Board of Management, J.A.S.: Messrs. H. I. Williams, 1st V.-P., presiding, A. T. Wilmot, Instructor and several members. Black Ants as a pest was fully discussed, helpful hints being given by Mr. Wilmot. Messrs. Morris and H. Thompson, delegates to the Conference of the Portland Branches Associated, gave interesting reports. It was noted that 'Tree Planting' would be carried out by the Branch on the 9th November. A Look-out Committee to arouse interest and secure new members, was formed. The Branch was glad to hear of the return to the Island of C. Lyon Hall, Esq., President, and the Secretary was asked to convey its expressions of joy.

B. F. MCCALLA,
Secretary.

Buff Bay.

MANCHESTER : Mizpah.—Meeting held 15.11.37. The 1st V.-P., Teacher E. W. Roberts, presided. He deplored the small attendance and hoped it was not due to lack of interest in matters agricultural. He went on to enumerate some of the things the J.A.S. had obtained for Jamaica, e.g., Roads, Post Offices, Markets, Tanks, etc. The degelates' report from the Half-Yearly meeting of the M.B.A. was deferred until the December meeting. Letters from Secretary of Parent Society and the Man hester Branches Associated were submitted. It was decided that Mr. J. McKay, a man who followed modern cultural methods, and a member of the Parent Society, be asked to become a member of the Mizpah Branch. Mr. J. T. Cousins, the caretaker of the ram "Joe Louis," owned by the Branch, reported that he was in splendid condition and had started service. Experiment Plot : It was reported that the crop of red peas was reaped, giving a return of 37 quarts to 4. That was considered good. It was decided that the next crop be Irish potato—half the square to be mulched heavily and the other half fertilized by way of comparison. The only Authorised Person present reported "no arrest" and that things were quiet. After a few other matters were dealt with the meeting adjourned.

U. C. WOLFE,
Secretary.

Williamsfield P.O.

HANOVER : N.W. Hanover.—Meeting held 4th Oct. Present : The Officers, Instructor Hastings, the Hon. Dr. Veitch, M.L.C., members and a very large gathering of visitors and friends. The President welcomed all and the Hon. President offered prayer. At this stage the Hon. President took charge of the meeting, introduced the Hon. Member and gave him a right hearty welcome. He gave the reason for the large attendance and why the Hon. Member was invited to attend. The extension of the main road into Westmoreland to connect Hanover with that parish was urgently necessary, and resolution would be read for adoption and asking the Hon. Member to take up the matter with Government. The Secretary read the resolution and moved same, speaking briefly upon it. Mr. Harvey seconded, others strongly supported, and it was unanimously carried. The Hon. Member received the resolution and spoke very forcibly upon the desirability of road and other improvements in the parish and promised to take up this particular Hanover-Westmoreland main road with Government. Another resolution asking for telephonic facilities here was read and adopted. The Hon. Member promised to take this matter to Government also, and showed how necessary this would be, especially at the present time. A vote of thanks was moved by Mr. Hutchinson, seconded by Mr. O'Reilly and conveyed to the Hon. Member by the Hon. President, who acknowledged same. The Instructor spoke on the improved methods of cultivation, insect pests and the importance of the Agricultural Society, and pleaded for increased membership. A very profitable and interesting meeting was brought to a close with the singing of the National Anthem.

T. E. O'REILLY,
Secretary.

Askenish P.O.

ST. JAMES : Orange.—Meeting held 30th Sept. Present : Messrs. J. W. Anglin, V.P., in the Chair, a number of visitors and school children. The Chairman moved that a letter of thanks be sent to Mr. W .D. Marr for his services to the Branch and the district. This was seconded by Mr. B. Bowen. Correspondence was next dealt with. Dr. Overton was called upon to address the meeting and took for his subject, "The Essentials to Good Health." He dealt with the subject under three heads, viz. : Anatomy, Physiology and Hygiene. A number of questions were put to the Doctor, to which satisfactory answers were given. A vote of thanks was conveyed to the Doctor. He suitably replied. After arrangements were made for a debate between Adelphi and Orange Branches, and minor matters discussed, the meeting terminated with the singing of the National Anthem.

E. S. ANGLIN,
Adelphi P.O. Secretary.

We have to acknowledge receipt of Notes of meetings from the following Branches which, unfortunately, owing to lack of space we are unable to publish :—

CLARENDON : Arthur's Seat, Brandon Hill, John Austin, Mt. Airey, Rock, Milk River.

PORTLAND : Bybrook.

HANOVER : N.W. Hanover, Sandy Bay.

WESTMORELAND : Bethel Town, Beeston Spring, Caledonia, Haddo, Porte s Mountain.

ST. MARY : Baxter's Mtn., Clonmel, Flint River, Free Hill, Highgate, Long Road, Mt. Joseph.

ST. CATHERINE : Ewarton.

ST. THOMAS : Hagley Gap.

ST. ANDREW : Content Gap.

TRELAWNY : Ulster Spring.

ST. ELIZABETH : Fyffes Pen, Malvern, Upper Pedro Plains, Pepper, Springfield.

MANCHESTER : Victoria Town.

JUVENILE BRANCHES.

From the HASTINGS BRANCH we have received an interesting account of their annual meeting. We record the names of their officers elected at that meeting, viz. : Cecil Holness, President; Enos Wright, 1st Vice-President; Samuel Green, 2nd Vice-President; Dermot Beckford, 3rd Vice President; Winston Eccleston, Secretary; Carmen Dixon, Treasurer

The Islington Branch met on the 20th October when the Instructor spoke on the benefits derived from such an organization, and urged the members present to take a lively interest in the Society and make it a success. He also gave the aims and objects of the Branch. The Officers were elected. Thirty-two members were enrolled.

Rock River Branch had their inaugural meeting on the 23rd Sept. Instructor Jones spoke to the gathering of 43 Juveniles who were enrolled. The Officers elected were : President, Beryl M. G. Ross; 1st Vice-President, Aileen V. Ross; 2nd Vice-President, Imogene Thomas; 3rd Vice-President, Lucilda Newell; Secretary, Vera V. Francis; Asst. Secretary, Adassa Smellie; Treasurer, Beryl M. G. Ross; General Manager, Principal Teacher of the School. A Managing Committee was also appointed. A debate, "Resolved that the pig is more remunerative than the goat," took place. Decision in favour of the Pig was reached.

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